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DIARY of MEETINGS on page 702.

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CONTENTS.

The whole of the literary matter in THE LANCET is copyright.

LETTSOMIAN LECTURES on Glycosuria. Delivered before the Medical Society of London, by ARCHIBALD E. GARROD, D.M., M.A. Oxon., F.R.C.P. Lond., F.R.S., Physician to, and Lecturer on Chemical Pathology at, St. Bartholomew's Hospital; Physician to the Hospital for Sick Children.—Lecture III.. 629

ORIGINAL ARTICLES.

On Malignant Disease of the Testicle, and the Operation for Removal of the Iliolumbar Lymph-glands when Secondarily affected, or as a Precautionary Measure at the Time of Excision of the Organ Primarily Diseased. By Sir HENRY MORRIS, Bart., M.A., M.B. Lond., &c 635

The Causation and Prevention of Certain Toxic Symptoms following the Administration of Salvarsan. By JAMES MCINTOSH, M.D. Aberd., PAUL FILDES, M.B., B.C. Cantab., and H. DEARDEN, M.R.C.S. Eng., &c. 637

The Operative Treatment of Graves's Disease. By WILFRED TROTTER, M.S. Lond., F.R.C.S. Eng. 641

"Aching Throat." By W. H. KELSON, M.D., B.S. Lond., F.R.C.S. Eng., D.P.H. Camb. 642

Further Experiments on the Treatment of Inoculated Rat Sarcoma and Observations on Certain Accompanying Blood Changes. By HELEN G. GRÜNBAUM, M.D. Birm., and ALBERT S. GRÜNBAUM, M.D. Cantab. 644

The Treatment of Talipes Equino-varus. By EDRED M. CORNER, M.C. Cantab., F.R.C.S. Eng. 645

The Value of Pneumococcus Vaccine in the Treatment of Pneumonia. By NATHAN RAW, M.D., M.R.C.P., F.R.S., &c.. 646

The Problem of After-care of Sanatorium Patients. By T. D. LISTER, M.D., M.R.C.P., &c. 647

Crawford Williamson Long, the Pioneer of Anæsthesia. By DUDLEY W. BUXTON, M.D., B.S., M.R.C.P.—(*Illustrated*) —(*To be continued*) 669

CLINICAL NOTES:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A Fatal Case of Prolonged Toxic Coma Lasting Nine Days. By I. C. MACLEAN, M.D. Lond.... 647

Note on a Case in which Onset of Diabetic Coma Simulated Appendicitis. By J. S. B. STOPFORD, M.B., Ch.B. Viet. 647

Note on a Case of Fracture of the Larynx. By JAMES ANDREW, M.D. Glasg., D.P.H. Camb.—(*Illustrated*) 648

MEDICAL SOCIETIES.

ROYAL SOCIETY OF MEDICINE: LARYNGOLOGICAL SECTION:— Exhibition of Cases and Specimens 648

LIVERPOOL MEDICAL INSTITUTION: Treatment of Wry-neck.—Stones in the Bladder 649

BRADFORD MEDICO-CHIRURGICAL SOCIETY: Recent Advances in the Diagnosis and Treatment of Syphilis 650

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY: Is Removal of Glands in Malignant Disease Worth While? 650

ÆSCULAPIAN SOCIETY: Diagnosis of Children's Diseases 651

GLASGOW MEDICO-CHIRURGICAL SOCIETY: Exhibition of Specimens, &c. 651

LEEDS & WEST RIDING MEDICO-CHIRURGICAL SOCIETY: Genesis of Chronic Arteritis.. 651

HARVEIAN SOCIETY: Acute Poliomyelitis and Allied Conditions 651

REVIEWS AND NOTICES OF BOOKS.

A Text-book of Pathology, with a Final Section on Post-mortem Examinations and the Methods of Preserving and Examining Diseased Tissues. By Francis Delafield, M.D., LL.D., and T. Mitchell Prudden, M.D., LL.D. Ninth edition 652

The Parasitic Amœbæ of Man. By Charles F. Craig, M.D.... 652

Diseases of the Ear, Nose, and Throat. By Wendell Christopher Phillips, M.D.... 653

Die Experimentelle Pharmakologie als Grundlage der Arzneibehandlung. By Dr. Hans H. Meyer and Dr. R. Gottlieb. Second edition 653

A Text-book of Experimental Psychology, with Laboratory Exercises. By Charles S. Myers, M.A., M.D. Cantab., Sc.D. Second edition 654

Materia Medica, Pharmacy, Pharmacology, and Therapeutics. By W. Hale White, M.D. Lond., M.D. Durh. (Hon.) Twelfth edition..... 654

New Tracts for the Times: 1. Problems of Sex. By J. Arthur Thomson and Patrick Geddes. 2. Womanhood and Race Degeneration. By Mary Scharlieb, M.D., M.S. Lond. 3. National Ideals and Race Regeneration. By the Rev. R. F. Horton 654

Selbstbefreiung aus Nervösen Leiden. Von Dr. Med. Wilhelm Bergmann 655

Contributions à l'Étude du Traitement des Tuberculoses Externes par des Injections Modificatrices. Les Injections d'Huile Gomenolée. Par Dr. Jacques Tribes 655

The Chink in the Armour 655

In a Cottage Hospital 655

Letters from China and Some Eastern Sketches..... 656

Round the Red Lamp 656

A Giver in Secret 656

Personal Calendar, a Monthly Index of Political, Official, and Social Changes..... 656

The Matriculation Directory ... 656

Insurance Register (Life)..... 656

Layton's Handy Newspaper List 656

Quarterly Journal of Experimental Physiology 656

REPORTS AND ANALYTICAL RECORDS FROM THE LANCET LABORATORY.

Eucerin.—(1) Patent Barley; and (2) Patent Groats.—(1) Special Oil Silk; and (2) Waterproof Sheeting.—Junora.—Decodol.—Protein Food with Organic Phosphates 657

NEW INVENTIONS.

A New Abdominal Support.—(*Illustrated*) 658

Envelope for Tongue Depressors.—(*Illustrated*) 659

LEADING ARTICLES.

THE NATIONAL INSURANCE ACT AND THE MODERN INTERPRETATION OF THE HIPPOCRATIC OATH 659

THE DISCOVERY OF ANÆSTHESIA 660

ANNOTATIONS.

The Menace of the Coal Strike 661

An "Apocryphal" Miracle Explained 661

The Problem of the Diphtheria Carrier 662

The Study of Tropical Diseases 662

The Pay of the Public Analyst 663

Successful Arteriotomy for Embolism of the Femoral Artery in a Case of Mitral Stenosis 663

February at Home and Abroad 664

Hypertrichosis and Spina Bifida Occulta 664

The Optical Convention 665

Rupture of the Common Bile-duct 665

The Surgery of Thoracic Wounds Implicating the Diaphragm 666

(1) The Effects of Caffeine upon the Germination and Growth of Seeds; (2) the Proteins of Rice 666

PUBLIC HEALTH.

Reports of Medical Officers of Health 675

VITAL STATISTICS: Health of English Towns..... 676

Health of Scotch Towns 676

Health of Irish Towns 677

Vital Statistics of London during January, 1912..... 677

Analysis of Sickness and Mortality Statistics in London during January, 1912..... 678

SPECIAL ARTICLES.

The London County Council and Medical Affairs 673

Far Eastern Association of Tropical Medicine 673

The London School of Clinical Medicine 674

The Services 679

The Work of a Medical Missionary in China 685

Plague in Russia and the Near East. 688

Birmingham 689

Liverpool 689

Scotland 690

Ireland 690

Paris 691

Berlin 692

Notes from South Africa..... 693

CORRESPONDENCE.

Exophthalmic Goitre (Dr. Helen Chambers, Dr. Dudley W. Buxton) 680

The Present Position of Salvarsan (Mr. Campbell Williams) 681

The Significance of the Symptoms in Cases of Duodenal Ulcer (Prof. Robert Saundby) 682

Operation for Phlebitis with Thrombosis (Dr. A. T. Brand) 682

The Bearing of Sir David Semple's Tetanus Researches on Surgery (Lieut.-Col. Henry Smith, I.M.S.)..... 682

The Colour Sense in Relation to the Emotions (Dr. George Henry Taylor) 683

The Intestinal Flora (Dr. Edwin Goodall) 684

Electric Metallic Colloids and their Therapeutical Applications (Dr. B. G. Duhamel).... 684

The Treatment of Tuberculosis and the Sanatorium Question (Dr. F. R. Walters) 684

Cystitis and Urinary Antiseptics (Dr. Anson Jordan).... 684

Ancient Egyptian Specialists (Dr. W. Ainslie Hollis) 685

Medical Men and Certificates: A Test Case (Mr. Edward T. Jones) 685

Compulsory Necropsies (Dr. J. C. McWalter) 685

OBITUARY.

Sir Francis Richard Cruise, M.D. Dub., F.R.C.P. Irel., M.R.C.S. Eng., D.L. 694

Richard Dill, M.D. Edin., L.R.C.S. Edin..... 694

Henry Fitzgibbon, M.D. Dub., F.R.C.S. Irel..... 695

THE NATIONAL INSURANCE ACT.

The British Medical Association's Letter to the Commissioners 695

MEDICAL NEWS.

International Eugenics Congress 635

Central Midwives Board 644

State Aid for Research in Mental Disorders..... 653

University of Bristol..... 691

City of London and East London Dispensary..... 695

Lister Institute of Preventive Medicine 696

Poor-Law Medical Officers' Association of England and Wales 696

Midland and Western Counties Obstetrical and Gynæcological Society 696

Tenure of Office of Sanitary Officials 697

Chelsea Clinical Society 697

Galton Eugenics Laboratory (University of London)..... 697

PARLIAMENTARY INTELLIGENCE.

Notes on Current Topics 697

House of Commons..... 697

Books, &c., received..... 698

Appointments 699

Vacancies 699

Births, Marriages, and Deaths.. 700

Notes, Short Comments, and Answers to Correspondents... 700

Medical Diary 701

FOR INDEX TO ADVERTISEMENTS SEE PAGES 2 & 4.

INDEX

MEDICAL AND OTHER BOOKS AND PUBLICATIONS

PAGE

ADLARD & SON:—
Fenwick .... Indications for Widely Resecting the Bladder Walls ..... Cover 1

BAILLIERE, TINDALL & COX:—
Bidwell .... Intestinal Surgery 7
Clarke, E. .. Errors of Accommodation and Refraction of the Eye .... Cover 1
Collier ..... Chronic Progressive Deafness ..... Cover 1
" ..... Nasal Obstruction, &c. ..... Cover 1
" ..... Latent, &c., Nasal Obstruction ..... Cover 1
" ..... Nasal Obstruction and Deformities of Upper Jaw ..... Cover 1
Paterson .... Gastric Surgery .. Cover 1
" .... Jejunal and Gastro-jejunal Ulcer .. Cover 1

BALE, SONS & DANIELSSON:—
Brown ..... Amœbic or Tropical Dysentery 5
" ..... Sprue and its Treatment 5
Daniels & Newham .. Studies in Laboratory Work ..... Cover 1
Moullin .... Inflammation of the Appendix ..... Cover 1
" .... Treatment of Gastric Ulcer ..... Cover 1
Rolleston.... Writing Theses for M.B. and M.D. .... Cover 1

CASSELL & CO:—
Herman .... Diseases of Women 6
Morris, Sir M. Diseases of the Skin .. 7

CHURCHILL, J. & A.:—
Coles ..... The Blood 3
" ..... Bacteriology, &c. 3
Crair ..... Malarial Fevers, &c. .. 3
Crirps .... Ovariotomy &c 5
Edwards .... Diseases of the Rectum, &c. 2
Fenwick .... The Value of Radiography ..... Cover 1
Hardwicke.. Sight-testing Made Easy 3
Hare, &s. .. National Standard Dispensatory 3
Hawk ..... Physiological Chemistry 3
Hewlett .... Serum and Vaccine Therapy 3
Jacobson & Rowlands.. Operations of Surgery .. 3
Jessop ..... Ophthalmic Surgery & Medicine 3
Parsons .... Diseases of Eye .. Cover 1
Thorne, Bezly..... Schott Nauheim Treatment, &c., of the Heart 6
Thresh ..... Simple Method of Water Analysis 3
Weiss, &c. .. Clinical Pathology .. 3
Whittaker .. Essentials of Surface Anatomy 3

CORNISH BROS.:—
Sawyer, Sir J. Maladies of the Heart.. 5
" Contributions to Practical Medicine 5
" Insomnia 5

FROWDE AND HODDER & STOUGHTON:—
Bidwell .... Minor Surgery 7
Lockwood .. Aseptic Surgery 6
" .. Clinical Surgery 6
McCann .... Cancer of the Womb, &c. ..... Cover 1

GLAISHER:—
Herschell .. Indigestion .... Cover 1
Savill ..... Hysteria ..... Cover 1
" ..... Neurasthenia 1
West ..... Granular Kidney and Physiological Albuminuria 7

LEWIS:—
Lewers..... Diseases of Women 6
" ..... Cancer of the Uterus .. 5
Moullin .... Enlargement of the Prostate .... Cover 1
Tilley ..... Diseases of the Nose, &c. ..... Cover 1

MACLEHOSE & SONS (GLASGOW):—
Barr & Barr. Diseases of the Ear 7
Macewen, Sir W. .... Growth of Bone..... 6

MACMILLAN & CO.:—
Lockwood .. Appendicitis..... 6

MEDICAL PUBLISHING CO.—
Lane ..... Operative Treatment of Fractures 6
" ..... Cleft Palate and Hare Lip 6

METHUEN & CO.:—
Cavanagh .. The Care of the Body .. 7
Childe ..... Control of a Scourge .. 7
Clouston .... The Hygiene of Mind .. 7
Drink Problem 7
Gorst, Sir J. K. Children of the Nation 7
Macfie ..... Air and Health 7
Newman .... Infant Mortality 7

METHUEN & CO.—(Continued).
Newsholme.. Prevention of Tuberculosis 7
Oliver, Sir T. Diseases of Occupation 7
Sainsbury .. Drugs, &c. 7
Schofield .... Functional Nerve Diseases 7

NISBET & CO.:—
Lane ..... Treatment of Chronic Constipation 6

WRIGHT & SONS (BRISTOL):—
Alderson .... Dental Anæsthetics 6
Lejars' Urgent Surgery 6
Love ..... The Deaf Child 6
Short..... New Physiology, &c. .. 6
Smith ..... Lateral Spinal Curvature and Flat Foot, &c. ..... Cover
Warwick & Tanstall .. First Aid to Injured.... 6

MEDICAL LIBRARIES, &c.:—
Baker, Birmingham—
Book Bargains..... 7
Beasley & Ketley—
Stammering 7
Behnke—
Stammering 6
Davidson & Co.—
Sight Testing for the General Practitioner ..... Cover 1
Lewis's Circulating Medical Library . 6
Matthews Bros.—
Wood: Application of Trusses.... 6
Squire's Companion 55
" London Hospitals 55

OFFICIAL AND GENERAL ANNOUNCEMENTS

APPOINTMENTS VACANT:—
Addenbrooke's Hospital, Cambridge .. 72
Beckett Hospital, Barnsley 70
Bedford County Hospital 72
Bethlem Royal Hosp., Lambeth-road . 69
Birmingham and Midland Eye Hospital 69
Bradford Royal Infirmary 69
Brentford Union 71
Brighton and Hove Hosp. for Women 70
Bristol Eye Hospital 69
Bristol Royal Hosp. for Sick Children 69
Brompton Hospital Sanatorium, Frimley 70
Cancer Hospital, Fulham-road 69
Carlisle Non-Provident Dispensary .. 69
Chelsea Hospital for Women 72
Cheltenham General Hospital 69
City and County of Bristol 70
City of Bradford Babies' Welcomes .. 71
County Asylum, Dorchester 71
County of Dunbarton 70
Dorset County Hospital, Dorchester.. 72
Dundee Royal Infirmary 70
Edmonton Union Infirmary 72
Gloucestershire Royal Infirmary, &c. 69
Great Northern Central Hospital, Holloway 70
Guest Hospital, Dudley 71
Herefordshire General Hospital 71
Hospital for Consumption and Diseases of the Chest, Brompton 70
Hospital for Sick Children, Great Ormond-street 72
Jersey Poor House and Infirmary 72
Kensington Dispensary and Children's Hospital 69
Kensington and Fulham General Hospital 70
King's College Hospital 71
Leeds Public Dispensary 71
Liverpool Dispensaries 70
Liverpool Royal Infirmary 72
Macclesfield General Infirmary 71
Metropolitan Hospital, Kingsland-rd. 72
Miller General Hospital, Greenwich-road 72
Naval Forces in the United Kingdom. 70
New Hospital for Women, Euston-road 72
North Riding Lunatic Asylum 71
Queen's Hos. for Children, Hackney-road 69
Radcliffe Infirmary and County Hospital, Oxford 69
Rotherham Hospital and Dispensary. 69
Royal Ear Hospital, Soho 69
Royal Free Hospital, Gray's Inn-road 69
Royal Halifax Infirmary 71
Royal Infirmary, Sunderland 71
Royal Naval Medical Service 69
St. Thomas's Hospital Medical School 72
Salford Royal Hospital 71
Salop Infirmary, Shrewsbury 69
Sheffield Union Hospital 71
Southampton Union Workhouse Infirmary 70
Staffordshire General Infirmary 70
Stirling District Asylum, Larbert 70
United Districts of Danbury, Chipping Norton, &c. 71
University College Hospital 72

APPOINTMENTS—(Continued).
University of Sheffield 70
Victoria Hospital for Children, Chelsea 71
West End Hospital for Diseases of Nervous System 72
West Herts Hosp., Hemel Hempstead. 69
West Suffolk General Hospital, Bury St. Edmunds 72
Wolverhampton and Staffordshire General Hospital 70

ASSISTANCIES, MEDICAL 73

ASYLUMS, HOMES, &c.:—
Ashwood House, Kingswinford 62
Association of Medical Men Receiving Resident Patients 68
Barnsley Hall, Bromsgrove 62
Barnwood House Hospital 63
Bishopstone House, Bedford 62
Brunton House, Lancaster 68
Buntingford House Retreat, Buntingford 64
Camberwell House, Peckham-road.... 62
Cheadle Royal 62
Clarence Lodge, Clapham-park 65
Coltharst House, Warford 68
Coppice, The, Nottingham 65
Crookshury Sanatorium, Surrey 66
Dalrymple House, Rickmansworth .. 67
David Lewis Colony, Alderley Edge .. 68
Dinedale Park, Darlington 65
Dr. Garadze Sanatorium 67
Farnham House, Dublin 64
Ghyllwoods 62
Grove House, Church Stretton 65
Grove, The, Catton, Norwich 65
Haydock Lodge, Newton-le-Willows .. 64
Heigham Hall, Norwich 62
Home for Epileptics, Maghull 66
Invereden Sanatorium, Cupar 61
Inverruth Lodge Sanatorium, Colinsburgh 65
Kingsdown House, Box 62
London Fever Hospital 62
London Open-Air Sanatorium, Wokingham 66
Malling Place, Kent 65
Malvern Hydropathic 66
Manna Mead, Blackheath 68
Maryville, Dublin 64
Melbourne House, Leicester 67
Meyrick, Harrow Weald 62
Middleton Hall, Co. Durham 62
Moat House, Tamworth 65
Mount Pleasant, Wanstead 68
Newmains Retreat, Lanarkshire 65
Nordrach in Wales Sanatorium 66
Nordrach-on-Dee, Banchory 66
Nordrach-upon-Mendip Sanatorium .. 65
Northlands Retreat, Wandsworth 68
Northumberland House, Finsbury-park 62
Northwoods House, Winterbourne.... 64
Norwood Sanatorium, Ltd. 65
No. 610, L.O., Strand 66
No. 636, L.O., Strand 69
Osea Island, Heybridge 66
Otto House, West Kensington 66
Painswick Sanatorium 66
Peckham House 64
Plympton House, South Devon 63

ASYLUMS—(Continued).
Portsmouth Corporation Mental Hospital 63
Ruebury Sanatorium, Northallerton.. 68
St. Andrew's Hospital, Northampton 65
St. Luke's Hospital, E.C. 62
Sanatorium Clavadel 67
Springfield House Private Asylum, Bedford 63
Stocker, Craven-street 66
Stretton House, Church Stretton..... 63
The Grange, Rotherham 62
The Pleasaunce, York 65
Vale of Clwyd Sanatorium 66
Warneford Asylum, Oxford 62
Wiesbaden, 30, Parkstrasse 67
Wye House, Buxton 65
Yarrow Convalescent Home, Broadstairs 64

FINANCIAL, &c.—
Equitable Reversionary Interest Soc. 60

HEALTH RESORTS, BATHS, &c.:—
Bad Nauheim 67
Passugg 66
St. Joachimsthal 67
Smedley's, Matlock 66

HOMES WANTED:—
No. 652, L.O., Strand 68

HOTELS:—
Farnborough Court Hotel 67
Hotel Metropole, Las Palmas 67
White Hart Hotel, Margate 67

HOUSE & ESTATE AGENTS:—
Bedford & Co., Wigmore-street 74
Bettinson, King's Lynn 74
Clark & son, new Cavendish-street .. 74
16, Colville-road, Bayswater 74
Elliott, Son & Boyton, Vere-street .. 74
Ley Clark, Wimpole-street 75
No 616, L.O., Strand 74
Symo, Egremont 74
CONSULTING-ROOMS:—
Balding, Russell-square 75
Elliott, Son & Boyton, Vere-street .. 75
No. 648, L.O., Strand 75

LIFE & FIRE ASSURANCES:—
General Life Assurance Co. 60
Prudential 60

MASSAGE:—
London School of Massage 60

MEDICAL ACCOUNTANTS, &c.:—
Dacie 73
Turner 74

MEDICAL AGENTS:—
Blundell & Rigby 79
Fieldhall, Limited 79
Manchester Clerical, &c., Association. 76
Manchester Medical Agency 76
Medical Agency 79
Needes, Herbert 79

MEDICAL AGENTS—(Continued).
Needes, J. C. 78
Peacock & Hadley 78
Scholastic, Clerical, &c., Assoc. 77
Turner 78

MEDICAL SCHOOLS:—
(LONDON.
West London Post-Graduate College.. 59
(PROVINCIAL, &c.)
Edinburgh University Residential Medical College 59
School of Medicine of the Royal Colleges, Edinburgh 59

NURSING INSTITUTES:—
Army and Navy Male Nurses' Co-operation 61
General Nursing Association 61
Hospital for Sick Children, Great Ormond-street 61
Leeds Trained Nurses' Institution 61
London Nurses' Association 61
Male Nurses Temperance Co-operation 61
Mental Nurses' Co-operation 61
National Hospital Male Nurses' Association 60
Nurses' Co-operation, Portland-place.. 61
St. Bartholomew's Hospital Nurses' Institution 61
St. John's House 61
St. Luke's Hospital, E.C. 61
Temperance Male Nurses' Co-operation 60
The Retreat, York 61
Westcliff Nursing Institution 61

OFFICIAL NOTICES:—
City of London Lying-in Hospital 53
Edinburgh Post-Graduate Courses in Medicine 58
Liverpool Hospital for Cancer and Skin Diseases 60
London School of Clinical Medicine.. 58
Medical Graduates' College and Polyclinic 58
Middlesex Hos. Medical School. Cover 1
Middlesex Hospital Medical School .. 59
Oxford Eye Hospital 59
Queen Charlotte's Lying-in Hospital.. 58
Royal College of Surgeons of England 59
Royal Society of Medicine .... Cover 1
Society for Relief of Widows and Orphans of Medical Men 60
Tancred's Charities 60
University of Wales 60
West End Hospital for Diseases of Nervous System 58

PARTNERSHIPS & PRACTICES 73

RAILWAY & STEAMSHIP CO.'S
New Zealand Shipping Co. 60
R.M.S.P.—
Yachting Cruises de Luxe..... 60

TUTORS & LECTURERS:—
Knight ..... 60 | No. 449, L.O. .. 75
Med. Corres. Coll. ..... 60 | Schnelle 6
| Weymouth 58

For Index to Trade and Miscellaneous Advertisements see page 4.

Lettsomian Lectures
ON
GLYCOSURIA.

Delivered before the Medical Society of London.

BY ARCHIBALD E. GARROD, D.M., M.A. OXON., F.R.C.P. LOND., F.R.S.,
PHYSICIAN TO, AND LECTURER ON CHEMICAL PATHOLOGY AT, ST. BARTHOLOMEW'S HOSPITAL; PHYSICIAN TO THE HOSPITAL FOR SICK CHILDREN.

LECTURE III.*

Delivered on March 4th.

MR. PRESIDENT AND GENTLEMEN,—When we enter upon the study of the internal secretions, and of the effects of disease in the glands which produce them, we find ourselves in one of the wonderlands of physiology and medicine. It behoves us to move with caution and to plant our footsteps firmly as we go, for the path is narrow and slippery, and on either side of it lie the swamps of fallacy and the mists of unrestrained hypothesis.

It is only in comparatively recent years that we have come to learn anything of the functions of the ductless glands, but, once started, progress has been rapid. We are beginning to appreciate the disturbances produced in the organism by excessive or diminished activity of certain individual glands of the group, and especially of the thyroid, and to trace indications of correlation of functions and interaction of these organs; of mutual inhibition in some cases and of coöperation in others.

Hence we are able to realise that a clinical picture which is presented when one of the glands of internal secretion, ductless or other, is diseased, may be due, not only to restricted or excessive production of the secretion of the diseased gland, but also to an upsetting of a natural balance of functions, due to a withdrawal of the stimulus or restraint which it exerts upon other members of the group. Such is the idea which underlies the use of the term polyglandular syndrome, which is often heard in the present day. Thus, removal of the thyroid leads to enlargement of the pituitary gland, and when the thyroid is over-active the thymus tends to undergo hypertrophy, to quote only two out of a number of known examples of interrelation.

Unquestionably these glands of internal secretion exert profound hormonic influences upon the metabolic processes carried on in the organism. When the thyroid is over-active the metabolic fires burn too brightly; when its activity is suspended they burn low; and the influence of internal secretions upon carbohydrate metabolism in particular admits of no question.

Nor must we omit to mention the influence exerted by the ductless glands upon bodily development—an influence which is clearly manifested in acromegaly, and more clearly still in diseases which develop during childhood. It is seen in the arrested bodily and mental growth of the cretin, in the precocious obesity and hirsuties induced by some tumours of the adrenal cortex, in the obesity and infantilism which constitute Fröhlich's syndrome, and in the precocious puberty associated with tumours of the pineal gland.

However, it is with the influence of the ductless glands upon carbohydrate metabolism that we are at present concerned.

GLYCOSURIA AND THE THYROID GLAND.

That exophthalmic goitre, the symptom-complex which results from hyperthyroidism, is sometimes associated with diabetes has long been known, as witness the cases recorded by Dumontpellier [1] in 1869, by Brunton [2] in 1874, by Wilks [3] in 1875, and by O'Neill [4] in 1878; and more recently it has been shown that the lowering of tolerance of glucose is not uncommon in association herewith.

Observers differ as to the frequency of such alimentary glycosuria e saccharo in Graves's disease. Undoubtedly in many cases no diminution of tolerance can be detected, but my own experience leads me to take my stand with those who hold that it is by no means an uncommon phenomenon. In not a few cases spontaneous excretion of sugar, of a transitory or intermittent kind, is observed, if carefully watched for, and in others, as I have already mentioned, persistent glycosuria, with the usual attendant symptoms which go to make up the clinical picture of diabetes. Thus we find the three grades of disturbed carbohydrate metabolism, to which I have so frequently referred, all represented among cases of exophthalmic goitre.

In some cases I have seen glycosuria follow so small a dose of glucose as 20 or 30 grammes and in a larger number 100 grammes sufficed to produce that effect. For example, a girl, aged 18, was admitted to hospital suffering from exophthalmic goitre. Her urine, passed after admission, was found to contain traces of a reducing substance which was proved to be glucose. This did not recur. At a later period a dose of 100 grammes of glucose was given at 11.30 A.M.; the urine passed at 1.30 P.M. contained 0·29 per cent. glucose, a specimen passed at 4 P.M. contained a mere trace, and subsequent specimens were sugar-free. In some cases the test dose of glucose has been followed by a glycosuria which has persisted for several days, as if the patient were actually on the verge of spontaneous excretion of glucose.

In the cases in which transitory spontaneous glycosuria occurs the output of sugar tends to be small—under 1 per cent.; it may be present on a single day only, or on several successive days, or it may recur at intervals. This phenomenon suggests that the tolerance is habitually so low that it is occasionally overstepped on an ordinary diet, and is in accord with the statement of H. Strauss,[5] that in the majority of conditions in which alimentary glycosuria e saccharo is wont to be met with spontaneous glycosuria is not infrequently seen.

The following case, which may be included in the diabetic group, exhibited several features of peculiar interest.

A coal porter, aged 33 years, was admitted to St. Bartholomew's Hospital under my care on May 9th, 1911. In his family asthma was the only hereditary complaint. At the beginning of April his wife had noticed that his eyes were staring, and at the same time he began to suffer from shooting pains in the occipital region, which were usually worst in the early morning. He tired more easily than usual and noticed that his heart beat unusually quickly at times. He had lost 5 lb. in weight during the preceding five weeks. His eyes were markedly protuberant and staring. There was retraction of the upper lid, and von Graefe's sign was well seen; convergence was natural, and his forehead became wrinkled when he looked upwards. There was conspicuous fine tremor of the hands, and his emotional and restless state tended to confirm the diagnosis of Graves's disease. However, his thyroid gland was not obviously enlarged. The area of cardiac dulness was normal and no murmur was heard, and although he had noticed palpitation at times his pulse-rate was only 60 on his admission, full and regular, with a systolic tension of 112 mm. His urine contained a reducing substance, which was proved to be glucose, to the amount of 0·06 to 0·38 per cent. on different days. The carbohydrate of his diet was reduced, and he was kept completely at rest, but he at no time had less than 6 oz. of bread a day during his stay in hospital. His pulse remained slow rather than quick—80 per minute was the quickest rate recorded, and on two occasions the rate fell as low as 48. Nevertheless, his appearance and symptoms as a whole left no doubt as to the diagnosis. Dr. J. G. Priestley, who examined his urine and fæces, reported that Cammidge's reaction was negative, and that the total fat amounted to 26·9 per cent. of the dried fæces, 7·4 per cent. being saponified, and 19·5 per cent. unsaponified fat. The patient improved conspicuously under treatment. The eyes became less prominent and the tremor diminished, and the sugar in his urine was reduced to a trace. However, he was restless, and would not consent to stay after May 23rd. When he was next seen, on June 2nd, his thyroid was distinctly enlarged and the pulse-rate was 100.

On July 10th the patient was readmitted and stayed until July 22nd. The eye symptoms were as before; the enlargement of the thyroid was slight; his pulse-rate was 92 on

* Lectures I. and II. were published in THE LANCET of Feb. 24th (p. 483) and March 2nd (p. 557), 1912, respectively.

1 Goitre Exophtalmique et Glycosurie, Paris, 1869.
2 St. Bartholomew's Hospital Reports, 1874, vol. x., p. 255.
3 THE LANCET, 1875, vol. i., p. 371.
4 THE LANCET, 1878, vol. i., p. 307.
5 Deutsche medizinische Wochenschrift, 1897, Band xxxiii., p. 309.

admission, and a systolic murmur was audible over the base of the heart. The restlessness and excitability had become aggravated. The urine contained from 0·36 to 0·55 per cent. sugar, and from 6·7 to 11·45 grammes were excreted in the 24 hours. The largest quantity of urine passed was 3180 c.c. in 24 hours. His weight had decreased by a further 4 lb. On two occasions the thyroid was exposed to the X rays; but the excretion of sugar was not influenced by this treatment. At this time Dr. Cammidge was good enough to examine the urine and fæces, and reported that the urine gave only a very doubtful pancreatic reaction by the distillation method, but none by the fermentation method. Although the total fat in the fæces was not very high, he found that the unsaponified exceeded the saponified fats, and this fact, coupled with incomplete casein digestion, he regarded as indicating the presence of a pancreatic lesion. The man was again seen on Sept. 6th, when the exophthalmos was less pronounced. A specimen of urine contained 0·25 per cent. glucose. Since that date we have unfortunately lost touch with him.

The most remarkable feature in this case was the variation of the pulse-rate and the bradycardia which was a prominent feature during his first stay in the hospital.

In most cases of diabetes occurring in association with exophthalmic goitre there is good reason to believe that the onset of the two groups of symptoms is more or less simultaneous, or that the symptoms of Graves's disease have preceded the glycosuria. However, we must not lose sight of the possibility of the development of the thyroid symptoms in patients who are already diabetic, a sequence of which a striking example is mentioned by Grube,[6] that of a woman who developed exophthalmic goitre after hearing that her urine contained 9 per cent. sugar. Moreover, accidental concurrence is also possible in connexion with this as with other conditions, but the evidence of the association of glycosuria with lesions of any special organ is not based upon their occasional concurrence alone, but rather upon the evidences of interdependence of the symptoms in individual cases. The diabetes of hyperthyroidism runs no exceptional course, the output of sugar may be large, and all the ordinary associated symptoms, culminating in death in coma, may be present.

I must not omit to mention that some observers have called attention to families in which Graves's disease has been present in some members and diabetes in others, and I myself have seen a young woman suffering from the severest form of diabetes whose mother had exophthalmic goitre.

Glycosuria Induced by Thyroid Administration.

We can hardly doubt that the excess of thyroid secretion is the exciting cause of the glycosuria in the disease under discussion, for lowering of glucose tolerance and spontaneous excretion of sugar may be induced by the medicinal use of thyroid extract. This fact has not received so much attention as it deserves, although it was noticed by Dale James,[7] Bécl ère,[8] and others, as long ago as 1894, and it affords an additional reason for caution in the use of that drug. I have recently seen sugar appear in the urine of a youth aged 18, who probably had no thyroid inadequacy, after he had taken 5 grains of thyroid extract daily for about six weeks. When the drug was stopped the glycosuria promptly ceased.

My own experience leads me to think that, as might be expected, this result is more readily brought about in cases in which thyroid secretion is normal, and the extract given acts as an overdose, than in those in which it is deficient or absent. Thus, in another case, in which the drug was given to reduce obesity, sugar appeared in the urine to the amount of 4 per cent. at the end of a week, when only 4 grammes had been taken in all, but quickly disappeared after the treatment was stopped.

However, patients with myxœdema may acquire glycosuria in this way. My house physician, Mr. Alan Moore, was good enough to examine the urine of 11 myxœdematous patients who had been under thyroid treatment in the out-patient department at St. Bartholomew's Hospital for years. No less than four were found to have glycosuria, and in three cases the excretion of sugar ceased within a week after the thyroid was stopped.

Ewald[9] has recorded a remarkable case of a myxœdematous woman who acquired glycosuria on three successive occasions after the administration of thyroid extract in very moderate doses, such as one 5-grain tablet a day, as much as 5 or 6 per cent. of sugar being present in her urine. In the intervals the urine was sugar-free.

In Notthaft's[10] most remarkable case, that of a man, aged 43, who, on his own initiative and in order to reduce his weight, took about 1000 5-grain tablets of thyroid extract in the course of five weeks, glycosuria was induced; but in association with it there appeared the other symptoms of Graves's disease—tachycardia, exophthalmos with von Graefe's sign, tremor, and even some enlargement of the thyroid gland. He passed over 3000 c.c. of urine in the day, which contained sugar to the amount of 1 per cent. Apart from any limitation of carbohydrates, the sugar disappeared and thirst ceased after the drug had been discontinued for ten days. Tremor ceased after four weeks, but the eye phenomena and swelling of the thyroid persisted for about six months.

It has been thought that in some instances administration of thyroid has given rise to actual diabetes, and von Noorden suggests that in such cases a pre-existent diabetic tendency has been awakened into activity by the drug. Friedrich von Müller[11] has described the onset of a rapidly fatal diabetes in a sufferer from exophthalmic goitre who was treated with thyroid extract, but here the treatment may have merely precipitated an event to which the original disease was itself capable of giving rise. If spontaneous hyperthyroidism can induce diabetes one sees no reason why continuous thyroid treatment should not do the same.

How the Thyroid Gland Influences Carbohydrate Metabolism.

It is a question of much theoretical interest whether or no the thyroid gland produces its effect upon carbohydrate metabolism through the pancreas. Opie inclines to the view that the glycosuria of Graves's disease is due to an associated pancreatic lesion, and such lesions have been found in some fatal cases. Thus, R. C. Cecil[12] quotes a case in which the pancreas was small and atrophic. The fact that thyroid administration may produce glycosuria can only be reconciled with such an explanation if we suppose that the hyperthyroidism produces the lesions of the pancreas, and some cases recorded by Dr. George Murray[13] strongly suggest that even when exophthalmic goitre is recovered from it may leave behind it irreparable damage to the pancreas.

Falta[14] suggests, on the other hand, that the excess of thyroid secretion exercises a check upon the function of the pancreas, either directly or by stimulating the activity of the chromaffin system. In favour of the latter explanation he refers to the observations of Kraus and Friedenthal and of A. Fränkel, who detected an increase of adrenalin in the blood of patients with Graves's disease, but emphasises the necessity of caution in such speculations. Falta has also extended the observations of A. Schmidt and Salomon,[15] on the occurrence of fatty stools in exophthalmic goitre. Their occurrence suggests a coincident restriction of the external secretion of the pancreas, and so favours Opie's view, but both Falta and Salomon found no such excess of neutral fats as is characteristic of pancreatic steatorrhœa, and the fat absorption was not markedly aided by administration of pancreon. Falta refers to certain observations which suggest that the internal, as well as the external, secretion of the pancreas is concerned in fat absorption. However, as he pointed out, serious difficulties are encountered when we attempt to explain the fatty stools of exophthalmic goitre by invoking a restraining influence exerted upon the internal secretion of the pancreas, not the least of which arises from the absence of fatty stools in most of the severe cases of ordinary diabetes.

If hyperthyroidism tend to induce glycosuria by exercising a restraining influence upon the functions of the pancreas, rather than by causing lesions of that gland, we should expect that withdrawal of the normal supply would have an opposite effect, and that the pancreas, relieved of its wonted restraint, would be unusually active in relation to carbohydrate metabolism. In other words, that an individual who formed no thyroid secretion would be able to deal with

[6] Zeitschrift für klinische Medizin, 1895, Band xxvii., p. 465.
[7] British Journal of Dermatology, 1894, vol. vi., p. 177.
[8] Gazette Médicale de Paris, 1894, Neuvième Serie, vol. i., p. 499.
[9] Berliner klinische Wochenschrift, 1895, Band xxxii., p. 25.
[10] Centralblatt für innere Medizin, 1898, Band xix., p. 353.
[11] Verhandlungen des XXIII. Congresses für Innere Medizin, 1906, p. 104.
[12] Journal of Experimental Medicine, 1909, vol. ix., p. 285.
[13] The Clinical Journal, 1909, vol. xxxiv., p. 244.
[14] Zeitschrift für klinische Medizin, 1910, Band lxxi., p. 1.
[15] Wiener klinische Wochenschrift, 1908, Band xxi., p. 870.

larger quantities of carbohydrates than a normal person. This appears to be the case, for a number of observers have found that patients with myxœdema exhibit a conspicuously raised glucose tolerance, and can take with impunity far greater amounts of sugar than would inevitably induce glycosuria in an ordinary man. Moreover, when thyroid extract is administered a lowering of glucose tolerance is induced. Thus, in the case of a boy, aged 6, recently under my care, who showed signs of hypothyroidism, but was not a complete cretin, 150 grammes of glucose were required to induce glycosuria, but after a short period of thyroid treatment, 50 grammes sufficed to produce excretion of sugar. Some adult patients with myxœdema seem able to dispose of any dose of glucose which can be given without excreting any of it. A similar elevation of glucose tolerance has been observed in dogs deprived of their thyroid glands, although a transitory glycosuria, perhaps due to emptying of the glycogen reservoirs, may follow the operation.

To sum up, then, it would appear that, whatever the mechanism called into play, excess of thyroid secretion tends to induce glycosuria, whereas hypothyroidism has an opposite effect. However, these effects are by no means constant, and whereas some patients who exhibit the other signs of thyroid excess in a marked degree do not excrete sugar, and may show no lowering of glucose tolerance, in other cases of a less pronounced kind glycosuria is one of the earliest symptoms manifested. The cause of this uncertainty of behaviour is not obvious, but, as we have seen, it is a feature common to most varieties of glycosuria.

Myxœdema with Excretion of Glucose.

On the other hand, we cannot shut our eyes to the existence of certain paradoxical cases, which appear to stand in direct contradiction to what has gone before. In these cases patients who were apparently suffering from myxœdema, or at least from thyroid insufficiency, have excreted sugar, apart from treatment by thyroid extract. The subject has been discussed at some length in a recent paper by Parisot.[16]

In some of the records, which are few in number, it is merely mentioned that a slight glycosuria was observed on one or more occasions. In other cases there has been some hesitation as to the diagnosis, and there have been peculiar features which justify the doubt whether, in spite of marked improvement under thyroid treatment, and in some instances disappearance of the glycosuria under such treatment, the disease from which the patient suffered was really myxœdema, and not rather disease of some ductless gland other than the thyroid, or possibly of more than one such gland. Thus, a case which Sir William Osler described was one of those in which some features of hyper- and some features of hypo-thyroidism were present side by side.[17]

A. Gordon[18] described two little brothers, aged 3 and 4 years respectively, who had pronounced glycosuria and signs of myxœdema, apparently acquired. Under thyroid treatment the symptoms, including the glycosuria, disappeared, but in spite of a relapse which followed an interruption of treatment for three weeks in its earlier stages, there was no return of myxœdema or glycosuria after the thyroid extract was stopped some months later. The length of immunity is not stated, but it would appear necessary to assume a temporary hypothyroidism in these cases.

I am indebted to Miss Heanley for the notes of a case, hitherto unpublished, which resembled Gordon's in this respect. The patient was an unmarried woman, aged 25, who suffered from amenorrhœa of 12 months' standing, and a swelling of the whole body, with headache and hystero-epileptic attacks. She is described as having a red, bloated face, with coarse red whiskers, and a well-developed moustache. Physical examination revealed nothing beyond an enormous increase of subcutaneous tissue. Her hands had become dry and clumsy and she became depressed and stupid, but her speech was never slow nor indistinct. Her urine had a specific gravity of 1040, and contained much sugar. She took thyroid extract in large doses, which in a month were reduced to five grains daily in consequence of signs of hyperthyroidism. Four months later, when the drug was stopped, her general health had greatly improved, her fatness was reduced, and the depression had disappeared. The urine no longer contained sugar. Although she had had no further thyroid treatment since May, 1908, when seen in November, 1911, she had a thin face and thin hands, the hair on her face was much diminished, and she was quite well. The urine was sugar free.

One can hardly class this case as one of myxœdema, and the hirsuties and obesity rather suggest the syndromes associated with tumours of the adrenal cortex and of the pineal gland; but with neither of these latter has glycosuria hitherto been observed. Miss Heanley and the patient were both convinced of the efficacy of the thyroid treatment, and whatever its nature, the case is of great interest as an example of temporary glycosuria associated with symptoms suggestive of a temporary affection of one or more of the glands of internal secretion.

A case recorded by Dr. W. M. Campbell[19] in 1894 was also that of a young woman, and the diagnosis of myxœdema was confirmed by the late Dr. Ord. She improved greatly on thyroid treatment, but the glycosuria persisted and was thought by Dr. Campbell to have been influenced by dieting rather than by thyroid extract.

Granting that glycosuria does occasionally accompany myxœdema, this fact cannot be held to invalidate the mass of evidence which connects that symptom with hyperthyroidism and various explanations of the paradox suggest themselves. For example, the supposed control of the thyroid over the pancreas, and the converse over-activity of the pancreas when this control is removed, will not come into play if the pancreas be itself diseased. Again, it is conceivable that, seeing that removal of the thyroid leads to hypertrophy of the pituitary body, the secretion of the latter gland may contribute to the causation of glycosuria in these cases; and again that the parathyroids may be concerned, for Eppinger, Falta, and Rudinger[20] found that removal of the parathyroids of a dog tends to depress glucose tolerance to a conspicuous degree.

GLYCOSURIA AND THE PITUITARY BODY.

Like the thyroid gland, the pituitary body has a very important influence upon the metabolism of carbohydrates, and in this connexion there is a striking resemblance between the effects of diseases of these structures.

Acromegaly is now believed to represent the syndrome which results from over-activity of the glandular portion of the pituitary, and thus to be the pituitary analogue of exophthalmic goitre. As in exophthalmic goitre, we meet in some cases of acromegaly with lowered glucose tolerance; in others with transitory or intermittent glycosuria; and in yet others, with frank diabetes. Indeed, if we may judge from the relative frequency of such symptoms in acromegaly and gigantism on the one hand, and in Graves's disease on the other, we should incline to regard hyperpituitarism as a more potent disturber of carbohydrate metabolism than hyperthyroidism.

Thus, Borchardt,[21] who collected the records of 176 cases of acromegaly, found that glycosuria had been observed in 63 cases, or no less than 35·32 per cent. In eight other cases lowered glucose tolerance had been noted, but that symptom had obviously been much less frequently looked for, and was only mentioned, as present or absent, in ten cases in all.

In some cases the glycosuria of acromegaly has been little, if at all, influenced by restrictions of diet, whereas in others it was so controlled. It is interesting to note that in the newer literature of pituitary tumours, since 1886, Borchardt found no record of glycosuria apart from acromegalic symptoms.

It is a peculiar feature of acromegaly glycosuria that in some cases the excretion of sugar has ceased completely, for a period, although the patient's diet was by no means poor in carbohydrates. Thus Strümpell[22] carefully watched, over several years, a case in which the urine of 24 hours contained at times as much as 100 to 120 grammes of glucose, and polyuria and thirst were prominent symptoms. During two separate periods, with an interval of four years between them, the sugar disappeared completely in spite of a diet rich in carbohydrates. In yet other instances the glycosuria, after persisting for years, has ceased and has not returned.

[16] Le Progrès Médical, 1910, troisième Série, vol. xxvi., p. 245.
[17] Journal of Nervous and Mental Diseases, 1899, vol. xxvi., p. 65.
[18] American Medicine, 1904, vol. vii., p. 229.
[19] Liverpool Medico-Chirurgical Journal, 1894, vol. xiv., p. 452.
[20] Zeitschrift für klinische Medizin, 1909, Band lxvii., p. 380.
[21] Ibid., 1908, Band lxvi., p. 332.
[22] Deutsche Zeitschrift für Nervenheilkunde, 1897, Band xi., p. 50.

Borchardt quotes such a case from Lichtheim's Klinik, and Pineles refers to a similar case observed by Finzi.[23]

One is tempted to connect such occurrences with variations in the activity of secretion of the pituitary gland, and such lasting cessation of glycosuria may mark the point of time when, as Cushing holds, the hypersecretion, which causes the acromegalic changes, gives place to hyposecretion; just as in some instances myxœdema has developed as a sequel of exophthalmic goitre.

The group of symptoms, commonly spoken of as "Fröhlich's syndrome" or "dystrophia adiposo-genitalis," is believed to result from hypopituitarism. The group includes excessive deposition of fat, hypoplasia of the genital organs, and disappearance of axillary and pubic hair, associated with symptoms of tumour of the pituitary gland, somnolence, headache, and bitemporal hemianopia. In association with this condition glycosuria is almost unknown, although thirst and polyuria are common. Von Frankl-Hochwart,[24] in his monograph upon the subject, mentions its occurrence in only one case, and, as in myxœdema, a conspicuous rise in glucose tolerance has been observed.[25] This is confirmed by the most important studies of Goetsch, Cushing, and Jacobson[26] on the relation of the pituitary body to carbohydrate tolerance. These observers show, from their experimental investigations upon animals, that the posterior lobe of the pituitary is that which controls carbohydrate metabolism, and that its secretion is discharged into the cavity of the third ventricle, and thence passes into the subarachnoid spaces and enters the blood stream by way of the dural sinuses.

Their experiments demonstrate clearly that excess of the secretion of the posterior lobe entering the circulation has a conspicuous effect in lowering glucose tolerance, whereas deficiency of such secretion has an equally conspicuous effect in raising the limit of tolerance. The authors quoted state, further, that in all but two of the ten cases of acromegaly which they had studied the patients had begun to show evidences of hypoplasia of the posterior lobe, such as the laying on of fat, subnormal temperature, and, in some instances, remarkably high glucose tolerance. They suggest that, when such symptoms develop, administration of glandular extract is indicated, and that it may be possible to determine the correct dosage by ascertaining the quantity of glucose required to induce glycosuria, and by giving such doses of the glandular extract as reduce the glucose tolerance to the normal limit.

As regards the production of glycosuria by administration of pituitary extract, no such bulk of evidence is forthcoming as of its production by thyroid preparations. This is not to be wondered at, seeing that pituitary extract has been so much less widely used, and in view of Cushing's results, such an effect is only to be looked for from extract of the posterior lobe. Borchardt caused excretion of sugar in rabbits by injection of hypophysis extract, but in dogs the effect was very uncertain. I know of no case in which glycosuria has been observed in man to result from pituitary treatment.

In some cases of acromegaly, as in some cases of exophthalmic goitre, structural lesions of the pancreas have been met with. Thus Cecil[27] records a case in which sclerosis and hyaline degeneration of the islands of Langerhans were found, and Hansemann[28] has observed sclerosis of the pancreas in a case of acromegaly. However, Borchardt states that in most cases the pancreas has been found to be normal.

It seems probable that whatever be the mechanism by which hyperthyroidism induces lowered glucose tolerance and glycosuria, a similar mechanism may be invoked to explain the same phenomena when they accompany hyperpituitarism.

ADRENAL GLYCOSURIA.

When we pass on to the consideration of the part played by the adrenal glands in the causation of glycosuria, we find ourselves confronted with a still more difficult and complex problem.

There can be no question that adrenalin—the one hormone produced by a ductless gland, of which the chemical composition and nature are accurately known—has a very definite influence upon carbohydrate metabolism. How far that influence is at work in the production of glycosuria and diabetes, as seen in man, is uncertain, but there are indications that it may play a very important part. Thus the observation of André Mayer,[29] which has been confirmed by other investigators, that after the removal of the adrenals in rabbits puncture of the glycosuric centre no longer causes excretion of sugar, suggests that puncture glycosuria, to which I have so often referred, is due to the conveyance of an impulse to the adrenals by way of the splanchnic nerve and a resultant over-secretion of adrenalin.

Adrenalin is the secretion of the medullary or chromaffin tissue of the adrenals, and of the chromaffin tissues in general, of which the adrenal medulla constitutes only the major part. It is probable that the adrenal cortex yields a different internal secretion which has a profound influence upon nutrition and development, and which is responsible for the obesity and hirsuties seen in connexion with adenomatous tumours of that portion of these glands.

There is no evidence which suffices to carry conviction that gross lesions of the adrenals are to be included among the causes of clinical glycosuria. It is true that a very few cases are on record in which diabetes has been associated with adrenal tumours. Such cases have been described by Burghart[30] and by Lépine.[31] Burghart's patient was a woman who suddenly developed thirst and polyuria some three months before her death. Her urine contained as much as 8 to 10 per cent. of sugar, and a large sarcoma of the left adrenal was found post mortem. Lépine's patient, a woman aged 60, who also had a sarcoma of the left adrenal, had hyperglycæmia and glycosuria, and died in coma soon after her admission to hospital. There was a history of loss of flesh for two years, and of excessive thirst for a year and a half before her death.

It would be very rash to conclude on the basis of these cases that there exists a form of diabetes due to disease of the adrenals, for their rarity makes an accidental association highly probable and the evidence of the interdependence of the tumour and the glycosuria is of the slightest. It is at least probable that in Lépine's case the diabetes antedated the malignant growth. Malignant growths originating in the adrenal medulla are not uncommon in children, and I have seen a number of such cases, but in none of them did the urine contain sugar, nor was there a raised pulse tension to suggest an excess of adrenalin in the blood.

In Addison's disease a condition of hypo-adrenalism may be assumed to exist, and glycosuria is therefore not to be expected. It is interesting to note that Porges[32] has shown that the blood of sufferers from this malady is poorer in sugar than normal blood, and he confirms the observation of Eppinger, Falta, and Rudinger[33] that such patients exhibit an abnormally high sugar tolerance. In a case recorded by Dr. Samuel West,[34] in which the adrenals were completely atrophied and the skin was pigmented, there was a severe form of diabetes. Here excess of adrenalin is out of the question, but the case is of special importance as showing that a patient, deprived of his adrenals by disease, may nevertheless be diabetic. Unfortunately, no information is forthcoming as to the condition of the pancreas and other viscera in this case.

As Blum was the first to show, injection of adrenalin in doses of from 1 to 2 milligrammes excites a transient glycosuria, and I have recently seen such glycosuria in a case of asthma, in which such an injection was given for therapeutical purposes. The dose required to induce an excretion of sugar varies in different cases, and in sufferers from different diseases. A number of observations bearing on this subject have been made of recent years, and the results so far obtained are summed up in a recent paper by M. Reichenstein,[35] who is himself a worker in this field, and has studied the effects of injections of adrenalin in cases of Graves's disease, diabetes, a variety of nervous disorders, and during pregnancy.

[23] Bollettino delle Scienze Mediche della Scuola Medica di Bologna, 1897 (original not seen).
[24] Comptes Rendus, XVI. Congrès International de Médecine, Buda-Pesth, 1909. Section de Neuropathologie, p. 89.
[25] Von Noorden: Die Zuckerkrankheit, fifth edition, 1910, p. 48.
[26] Johns Hopkins Bulletin, 1911, vol. xxii., p. 165.
[27] Journal of Experimental Medicine, 1909, vol. xi., p. 278.
[28] Berliner klinische Wochenschrift, 1897, Band xxxiv., p. 417.
[29] Comptes Rendus de la Société de Biologie, 1906, vol. lx., p. 1123.
[30] Verhandlungen des Vereins für Innere Medizin, 1897, Band xvi., p. 455.
[31] Revue de Médecine, 1897, vol. xxvi., p. 539.
[32] Zeitschrift für klinische Medizin, 1910, Band lxix., p. 341.
[33] Ibid., 1908, Band lxvi., p. 1; 1909, Band lxvii., p. 380.
[34] Pathological Society Transactions, 1890, vol. xli., p. 271.
[35] Wiener klinische Wochenschrift, 1911, Band xxiv., p. 862.

It is evident that, given a disease which induces an excessive supply of adrenalin to the blood, hyperglycæmia and glycosuria are likely to be among its symptoms, and the evidence forthcoming suggests that adrenalin may play the chief part in regulating the glucose contents of the blood. In this connexion it is worthy of note that Ernst Neubauer [36] has detected hyperglycæmia in patients with chronic renal disease and high pulse tension, and that other observers have demonstrated hypertrophy of the chromaffin tissues and hyperadrenalism in such cases. It is possible at least that some of the cases of mild diabetes in later life may have their origin in a more pronounced degree of adrenalin excess.

GLYCOSURIA IN PREGNANCY.

A place must undoubtedly be assigned to pregnancy among the causes of glycosuria, but in approaching the consideration of this subject it must be borne in mind that lactosuria of slight degree is not uncommon during the last weeks of gestation, and that women suffering from diabetes occasionally become pregnant. Therefore it is necessary to make sure, in any given case, that the sugar excreted is not lactose, and also, what is more difficult to prove, that the glycosuria has only developed after the commencement of pregnancy.

Far more common than a spontaneous excretion of sugar is a lowering of glucose tolerance, and, as von Jaksch and his assistant, Lanz, [37] pointed out, in 1895, many pregnant women exhibit glycosuria e saccharo. This observation has since been fully confirmed. Bar [38] estimated that whereas in normal adults the limit of glucose tolerance is between 9 and 13 grammes per kilogramme of body weight, in pregnant women it is lowered to 6 to 8 grammes per kilogramme. Reichenstein, to whose work on adrenalin glycosuria I recently referred, found that the ease with which adrenalin caused glycosuria varied with the glucose tolerance.

The frequency of spontaneous glycosuria in pregnancy is very differently estimated, and the figures given probably depend largely upon the delicacy of the tests employed. As the excretion of sugar may be very transient, it is liable to be overlooked unless a careful watch is kept for it throughout the whole period of gestation. In his valuable paper on the subject, Whitridge Williams [39] quotes a case in which glycosuria, with excretion of 0·5 to 1 per cent. of glucose, began three months before labour and persisted for three weeks. Reichenstein [40] states that of 93 pregnant women, 11 (11·8 per cent.) excreted glucose to the amount of 0·2–0·7 per cent., usually in the eighth to tenth months. Of 65 patients, 27·6 per cent. excreted from 2 to 7 grammes after a dose of 100 grammes of glucose.

In a number of cases glycosuria which has begun during pregnancy has ceased after delivery, and in some such cases the quantity of sugar has been somewhat large, and thirst and polyuria have been prominent symptoms. Thus, in a case described by Durieux [41] thirst was complained of in the seventh month, and sugar was then first found at the weekly examination of the urine. The output was as much as 210 grammes in 24 hours, but after the diet was restricted it fell to 50 grammes, and after delivery it disappeared entirely. Cases of like kind were described by Bennewitz, [42] whose paper I have not seen, as long ago as the year 1826, and are referred to by Matthews Duncan in his classical paper which first awakened wide interest in puerperal diabetes, and whose gloomy conclusions as to the prognosis of diabetes in pregnant women have ever since dominated professional opinion on the matter.

Still more interesting are the cases in which diabetic symptoms have recurred in successive pregnancies, although absent in the intervals between them. Such cases show clearly that during pregnancy conditions exist which are favourable to the development of glycosuria, and which cease with its termination. This is in full accord with the observations on lowered glucose tolerance.

However, it cannot safely be asserted that a glycosuria which ceases after delivery is of necessity a merely temporary one, as is shown by a case for permission to quote which I am indebted to my colleagues, Dr. H. Williamson and Dr. W. P. Herringham. A primapara, aged 20, was admitted to St. Bartholomew's Hospital on Sept. 18th, 1911, with glycosuria. The daily output of glucose varied between 5 and 12 grammes. After her delivery on Oct. 4th the sugar wholly disappeared, but a glucose test some weeks later showed that her tolerance was not fully restored. On Jan. 26th, 1912, the patient was readmitted, under Dr. Herringham's care, excreting some 60 grammes of glucose in the 24 hours. The sugar has since disappeared with a restricted diet.

Again, there are cases on record in which a persistent diabetes has apparently commenced during pregnancy and has continued after delivery. In some such cases death in coma has occurred during the puerperium. However, I cannot quote the record of any case in which glucose was definitely shown to have first appeared in the urine during pregnancy, and in which after her delivery the patient has lived on as a confirmed diabetic.

Several views have been put forward as to the causation of the glycosuria of pregnancy. Some have held with Keim [43] that it is due to a toxæmia. Others, among whom are Commandeur and Porcher, [44] connect it with abnormal sugar metabolism associated with lactation, for glucose is a constituent of the disaccharid lactose.

The most recent theory, advanced by Reichenstein, [45] Cushing, [46] and others, ascribes the glycosuria of pregnancy to the influence of that state upon the glands of internal secretion, such as the thyroid and the pituitary body. In its clinical aspects this variety of glycosuria certainly bears a striking resemblance to those connected with diseases of the ductless glands, and it is on that account that it has been spoken of in this lecture. Enlargement of the thyroid gland during pregnancy is a well-known event, and changes in the pituitary have been shown by Erdheim and Stümme [47] to be common in that state. Such an explanation will account for the so frequent cessation of the glycosuria after delivery, and is at least highly plausible.

Moreover, it gains much support from a most interesting case which Marek [48] has very recently placed on record. The patient, a primipara, aged 26, developed the characteristic symptoms of acromegaly during the eighth month of pregnancy. Her hands and feet enlarged, her skin, nose, and lips were thickened, and enlargement of the lower jaw prevented her teeth from meeting. She became very somnolent. Sugar was present in her urine. After delivery the glycosuria ceased in about two months, and by that time all the signs of acromegaly had also disappeared. It can hardly be doubted that the glycosuria and attendant symptoms were alike due to hyperpituitarism developed in association with the pregnancy.

One naturally associates with the glycosuria of pregnancy that which has been observed in association with diseases of the female generative organs. Imlach [49] described a case in which removal of the uterine appendages, on account of pyosalpinx with ovarian adhesions, was followed within a week by cessation of glycosuria which had been detected five months before the operation and which was accompanied by thirst and polyuria. In cases recorded by Croom, [50] Beyea, [51] and Henkel [52] removal of ovarian tumours or uterine myomata has in like manner been followed in the course of a few months, and apart from restriction of diet, by disappearance of sugar from the urine. In Beyea's case the glucose amounted to as much as 7 per cent. It will be noticed that in most cases the cessation of the glycosuria has been much more gradual than after childbirth.

GLYCOSURIA WITHOUT HYPERGLYCÆMIA.

The last variety of glycosuria of which I propose to speak differs from all those which we have hitherto considered in one essential respect—namely, that the excretion of sugar in the urine is not dependent upon any excess in the blood.

In my first lecture I referred to the glycosuria which follows the injection of phloridzin, and it is the generally

[36] Biochemische Zeitschrift, 1910, Band xxv., p. 284.
[37] Wiener Medicinische Presse, 1895, Band xxxvi., p. 1857.
[38] Leçons de la Pathologie Obstétricale, 1907, vol. ii., p. 794.
[39] American Journal of Medical Sciences, 1909, vol. cxxxviii., p. 1.
[40] Wiener Klinische Wochenschrift, 1909, Band xxii., p. 1445.
[41] Bulletin de la Société Obstétrique de Paris, 1905, vol. viii., p. 141.
[42] Osann's 12ter Jahresbericht des Königlichen Poliklinischen Instituts der Universität zu Berlin, 1826, p. 23 (original not seen).
[43] Bulletin de la Société Obstétrique de Paris, 1898, vol. i., p. 300.
[44] Archives Générales de Médecine, 1904, vol. cxciv., pp. 2241, 2305.
[45] Wiener klinische Wochenschrift, 1909, Band xxii., 1445.
[46] Johns Hopkins Bulletin, 1911, vol. xxii., p. 165.
[47] Beiträge zur pathologischen Anatomie und zur allgemeinen Pathologie, 1909, Band xlvi., p. 1
[48] Zeitschrift für Gynäkologie, 1911, Band xxxv., p. 1612.
[49] Brit. Med. Jour., 1885, vol. ii., p. 61.
[50] British Gynæcological Journal, 1895, 1896, vol. xi., p. 476.
[51] American Journal of Obstetrics, 1900, vol. xli., p. 145.
[52] Deutsche medizinische Wochenschrift, 1909, Band xxxv., p. 2003.

accepted opinion that such glycosuria is due to an abnormal permeability of the kidneys and an inability on their part to retain the normal quotum in the blood. There are some grounds for the belief that a glycosuria of the same kind is sometimes met with in clinical practice, apart from the administration of any special drugs or toxic substances.

Undoubtedly, there is a group of cases of persistent slight glycosuria in which small quantities of sugar are continually present in the urine, in which variations of diet have little or no effect upon the output of glucose, and in some of which the quantity of sugar in the blood has been shown to be rather diminished than increased.

Cases of this kind have been carefully observed and described by several investigators, among whom Lüthje,[53] Bönniger,[54] Siebke,[55] and Weiland[56] may be specially mentioned. Bönniger's case may be selected as an example. The patient, a drinker, aged 37, had for years excreted small quantities of sugar, some 0·2 per cent., in urine with an average specific gravity of 1020. The sugar, which was first detected at an examination for life insurance and was proved to be glucose, varied but little in amount. The daily output was not influenced by diet, was neither increased by a diet rich in carbohydrates, nor diminished by restriction of starch. Even so large a dose of glucose as 100 grammes had no effect upon the output. The blood serum was found to contain 0·097 per cent. of glucose, whereas 0·1 per cent., or rather less, may be taken as the normal content.

In Weiland's three cases the average quantity of sugar in the urine of 24 hours was 7–10 grammes, 3 grammes, and 10–20 grammes respectively. In no case was the sugar of the blood above the normal amount.

I have myself had opportunities of observing, for several years past, the case of a lady between 30 and 40 years of age who was found to be excreting sugar in 1907, but who has at no time exhibited any symptoms of diabetes. Some analyses made in India in 1907 and 1908 gave a daily output of about 1 gramme of glucose. The patient was placed upon a diabetic diet, but did not bear it well. On such a diet the output of sugar was, if anything, greater than when no restrictions were imposed. Soon after I first saw her, in 1909, she stayed in a nursing home for a time, and during that period the accompanying analyses were made by Dr. W. H. Hurtley, who employed Ivor Bang's method for the elimination of sugar.

Date.	Carbohydrates in diet (white bread).	Total urine in 24 hours.	Optical activity.	Percentage of sugar (Bang).	Total sugar in 24 hours.	Iron reaction and acetone.
1909	Grammes.	C.c.			Grammes.	
June 8th.	150	905	+ 0·06	0·27	2·4	—
,, 9th.	180	925	+ 0·24	0·53	4·9	—
,, 10th.	140	960	+ 0·15	0·48	4·6	—
,, 11th.	0	1260	—	0·368	4·6	—
,, 12th.	0	1075	0	0·38	4·1	Iron reaction.*
,, 13th.	180	1140	+ 0·4	0·469	5·3	Ditto, faint.
,, 14th.	180	450	+ 0·22	1·086	4·9	—
,, 15th.	180	500	– slight	0·702	3·5	—
,, 16th.†	180	805	– 0·12	0·308	2·5	—
,, 17th.	180	850	+ slight	0·41	3·5	—
,, 18th.	180	765	+ slight	0·342	2·6	—
,, 19th.	180	1100	– 0·16	0·218	2·4	—
,, 20th.	140	1075	– 0·23	0·233	2·5	—
,, 21st.	0	1245	– 0·125	0·238	3·0	Iron reaction, acetone.
,, 22nd.	0	890	– 0·22	0·23	2·0	Ditto.
Oct. 9th, 1911.	Ordinary diet, avoiding sugar.	1180	0	0·37	4·36	—

* A slight malarial attack on this day.
† A dose of 10 grammes of glucose was given on this day.

[53] Münchener medizinische Wochenschrift, 1901, Band xlviii., p. 1471.
[54] Deutsche medizinische Wochenschrift, 1908, Band xxxiv., p. 780.
[55] Ibid., 1910, Band xxxvi., p. 1031.
[56] Deutsches Archiv für klinische Medizin 1911, Band cii., p. 167.

It will be seen that the output of sugar is comparable to that in Bönniger's and Weiland's cases, and that restriction of diet, on the one hand, and the administration of a small dose (10 grammes) of glucose on the other, had no obvious effect upon the glycosuria. The great discrepancy, here seen, between optical activity and reducing power was also noticed by Weiland in one of his cases, and is not uncommon when very small quantities of glucose are present in urine. In this case glucose was definitely proved to be present, but even when the urine was lævo-rotatory lævulose was not detected, and the lævo-rotation was not destroyed by fermentation with yeast, but was actually increased owing to removal of glucose.

The patient was advised to avoid sugar and any great excess of starchy foods, but otherwise to take an ordinary diet. Her health remains good, and the last analysis on the table, made two years and four months later than those of the 1909 series, shows that in that interval there had been no aggravation of the glycosuria. Unfortunately, no estimation of the sugar in the blood has been made in this instance.

As long ago as in 1896 G. Klemperer[57] suggested that there probably exists a variety of glycosuria met with in clinical practice which is due to failure on the part of the kidneys to retain the normal sugar content in the blood. Such glycosuria would be of like nature to that caused by the administration of phloridzin. The cases which I have quoted have been regarded as examples of such renal glycosuria. No other explanation can be offered of an excretion of sugar which is not influenced by changes in the amount of carbohydrate in the diet and is not dependent upon any excess of sugar in the blood.

It would appear that in these cases the mechanism for dealing with carbohydrate is intact, nor can they be explained by deficient destruction, or excessive production, of sugar in the organism. However, it will be prudent to adopt an expectant attitude as to their explanation until further observations have extended our knowledge of this variety of glycosuria and until longer periods of watching have shown what is the ultimate outcome of such cases.

It is not suggested that the kidneys are the seats of structural disease, but rather of a functional disorder which may possibly be due to the presence in the blood of some endogenous or enterogenous toxin which acts in the same way as phloridzin does.

CONCLUSIONS.

And now the time at my disposal is almost exhausted, and I must endeavour to gather up the threads of my discourse and discuss very briefly the bearings of the matters dealt with upon the nature and treatment of diabetes.

In the course of these lectures I have called your attention to many different morbid conditions which bring about disturbances of the metabolism of carbohydrates and to the fact that such disturbances manifest themselves in several different ways: now by a lowering of glucose tolerance without actual excretion of sugar in the urine; now by a spontaneous excretion of sugar in smaller or larger amount during limited periods of days, weeks, or months; and now by a persistent glycosuria, accompanied in its higher grades by the associated symptoms which go to make up the clinical picture of diabetes. Moreover, we have seen how disturbances of these several grades may be induced in different cases by one and the same cause, or in the same case at different times.

The effect of this is to obliterate in one's mind the conception of diabetes as a sharply defined disease, and to present the malady as merely the maximal phase of a series, rising by gradual steps from the normal of metabolism, just as myxœdema is the culminating point of the almost insensible grades of hypothyroidism. Between the sufferer from grave diabetes and the potential glycosuric there is a striking contrast, but the gulf which separates them is bridged over by intermediate cases of all degrees of severity. If so, it follows that, with the possible exception of the so-called renal glycosuria, there is no such thing as non-diabetic glycosuria, although there are many varieties which lack the sinister import which we connect with the name of diabetes.

The differences are, I believe, rather of degree than of kind. In saying this I do not wish to imply that a transient glycosuria is necessarily of grave import, but rather that diabetes is not of necessity a fatal malady.

[57] Verhandlungen des Vereins für innere Medizin, 1896, Band xvi., p. 67.

We are beginning to realise that many organs take part in the regulation of carbohydrate metabolism, and that, if I may be allowed to change the metaphor previously employed, the displacement of one prop may endanger the equilibrium of the whole fabric. For it seems to me that we are justified in regarding the normal metabolic level as maintained by the balance of a number of mutually controlling forces.

In some instances the lesion of one of the supports of the fabric is capable of repair, and with its restitution the disturbance ceases and the normal condition is restored. In other instances the damage is beyond repair, and in time brings down the whole structure. We may imagine that in some individuals, as the result of inborn peculiarities, the equilibrium is less stable than in the majority, is upset by more trifling causes, and when upset is less easily restored. These are the people who inherit or possess the diabetic tendency.

Even when one of the props is removed the structure, although weakened, may still stand erect, and hence perhaps the uncertain incidence of glycosuria, even when the causes which tend to induce it are at work.

If such a conception in any way represents the truth it is clearly our business, in any case with which we meet, to seek to find out where the primary weakness lies, and to attempt its repair. In theory this is well enough; it is in its practical application that the difficulty is encountered.

Whilst it is true that in some cases of diabetes the nervous system is evidently at fault, and that in others the thyroid, the pituitary, or the pancreas is the seat of disease, in the great majority of cases which we encounter in practice we can find no indications of the underlying lesion upon which the metabolic derangement depends. The various tests of pancreatic efficiency give uncertain or negative replies; no ductless gland is evidently the seat of disease; no intestinal disturbance points to an origin in the alimentary tract, and no cardio-vascular changes help us to class the case. There is, to all appearance, a sheer, wanton, metabolic insanity. Nevertheless, we can hardly doubt that in such cases there is an underlying morbid cause at work, if only we could find it out, and that if we follow up minutely every clue and every deviation from the normal we shall surely see light in time. I for one do not believe that the chemical processes in the body go wrong of themselves.

Of course, it by no means follows that the detection of the underlying cause in any given case of diabetes will enable us to cure the patient. It is highly probable that in most instances the primary lesion is not amenable to treatment, either medical or surgical. Nor is it to be expected that any one plan will prove beneficial in all cases; the multiplicity of causes of the malady excludes any such hope. But that in the future the range of efficient control will be greatly extended I firmly believe, and I look forward to a time when the outlook of some diabetic patients at least will be far less hopeless than it is at present.

The efficacy of restriction of diet, which has ameliorated the lot and prolonged the lives of hosts of sufferers from diabetes, although it is essentially a symptomatic therapy, is due to the fact that it is the metabolic derangement which proves fatal to most such patients. Yet there is a growing dissatisfaction with the limitations of such methods, which can only postpone, and cannot avert, the fatal ending.

Only when we have learned more of what lies behind the diabetic syndrome can we hope to attain to better therapeutic methods. Then will our present dietetic treatment be relegated to its true position as a valuable means of holding in check the metabolic error and minimising its evil effects, whilst our main efforts are directed to the repair of the underlying lesions, so far as they admit of repair.

INTERNATIONAL EUGENIC CONGRESS.—As already announced an International Congress on Eugenics will be held at the University of London from July 24th to 30th, under the presidency of Major Leonard Darwin. An exhibition of charts and objects bearing on human heredity will be held in connexion with the Congress, and the secretary of the exhibition, 6, York-buildings, Adelphi, London, W.C., requests the loan of any objects relative to the subject.

ON

MALIGNANT DISEASE OF THE TESTICLE, AND THE OPERATION FOR REMOVAL OF THE ILIO-LUMBAR LYMPH-GLANDS WHEN SECONDARILY AFFECTED,

OR AS A PRECAUTIONARY MEASURE AT THE TIME OF EXCISION OF THE ORGAN PRIMARILY DISEASED.

BY SIR HENRY MORRIS, BART., M.A., M.B. LOND., F.R.C.S. ENG.

IN an interesting lecture on "An Improved Method of Removing the Testicle and Spermatic Cord for Malignant Disease," by Mr. J. Bland-Sutton, published in THE LANCET of Nov. 13th, 1909, reference is made to a case of mine which Mr. A. G. R. Foulerton had included in his well-known paper on "Chondrifying Carcinoma," published in the fifth volume of the Archives of the Middlesex Hospital (1905). Foulerton's account gives particulars of my case down to 1896. After reading Mr. Bland-Sutton's lecture I was induced to set in order my various notes and the several letters and telegrams I had at different times received concerning this patient, and these bring the complete history of the case down to the date of his death in 1904.

It so happened that in December, 1910, another patient, whose history is also one of long duration, came under my care; and this case caused me to make malignant disease of the testis the subject of one of my clinical lectures at the Middlesex Hospital in 1911. Other calls upon my time have prevented me hitherto from publishing this clinical lecture as I intended to do; but I am now moved to record the notes of the cases by the appearance in the columns of the last three successive issues of THE LANCET of (1) Mr. H Morriston Davies's article, (2) Sir Alfred Pearce Gould's letter, and (3) the letter and illustration of Mr. Bland-Sutton.

The first case which I shall describe is quite an extraordinary one. It is altogether exceptional, in its duration, course, complications, and the manner of the patient's death; and the operation performed for the removal of the secondarily involved abdominal lymph gland was spoken of by the late Mr. T. Nunn as the most extensive and severe operation he had ever witnessed. The histological picture presented by the sections of the abdominal mass removed from my patient accords precisely with that yielded by the lymph gland removed from the anterior surface of the inferior vena cava in Mr. Bland-Sutton's case.

CASE 1. *Clinical history.*—Captain ——, aged 28, married, was admitted at the request of the late Mr. Thomas Nunn under my care into the Middlesex Hospital on March 25th, 1895, on account of a large tumour in the left side of the abdomen. He had had his left testis removed in 1893 in India for what was described as an adeno-sarcomatous tumour. Up to that time his health had been good; but since, he had never been really well and had been frequently under treatment for neurasthenia and dyspeptic troubles, obstinate constipation, and twitchings and tinglings in his hands and feet. One month before his admission, it was stated, he had been under Mr. (now Sir) Victor Horsley, and it was then, it seems, that the abdominal tumour was first detected. It appears to have been regarded as an enlarged spleen, and was situated "higher up and further out" than at the time of admission to the Middlesex Hospital.

When first seen by me the patient's abdomen was not distended, but on palpation a large mass was felt below the costal margin on the left side. This mass extended nearly to the middle line, outwards under the tenth costal cartilage, and downwards to a line drawn horizontally on the level of the umbilicus. The tumour moved downwards slightly on deep inspiration. There was tenderness on deep pressure over the swelling and the percussion note over it was resonant. Splenic dulness was normal.

The operation.—An operation having been decided on, an incision was made (March 29th, 1895) through the abdominal wall along the median line from the ensiform cartilage to the umbilicus. As the growth was found to be situated behind the peritoneum the patient was turned upon his right

side, and a long oblique incision parallel to the last rib was made in and prolonged forwards and downwards from the left lumbar region. The tumour was in front of the kidney and was spread over the side and front of the vertebral column. With the fingers of one hand in the peritoneal cavity, and those of the other hand passed through the lumbar wound the mass could be made to move readily in a lateral direction. It was punctured posteriorly, but proved to be solid on this aspect. Complete enucleation from behind could not be effected, so the anterior incision in the abdominal wall was connected with another which transversely divided the left rectus muscle. An assistant then pressed forward the tumour with his fingers in the lumbar wound, the overlying peritoneum on the front of the tumour was divided, and together with some adherent small intestine was detached; and in this way the anterior surface of the tumour mass was exposed. A cyst, the size of an orange, presented itself; sponges were packed around this, and from the cyst, which was ruptured in the steps of the enucleation, turbid fluid escaped. When the separation was completed the tumour was extracted through the lumbar incision. After the main mass had been extracted, two smaller growths were detected and removed. A considerable length of the aorta was exposed. After irrigating with hot water, the wounds were closed. The patient made a satisfactory recovery, and was discharged on April 19th, just three weeks after the operation.

Naked eye appearances of the growth.—The growth removed consisted of three masses; the largest was roughly oval in shape, measuring 4 by 2½ inches, and was 2 inches in thickness. The two smaller masses were rounded, and each was about the size of a small orange. Their outer surfaces were smooth but irregular, the irregularity being caused by numerous small cysts. In the large mass there was an empty irregular cyst, 1 inch by 1½ inches in diameter, with a smooth inner lining to its walls. On section each mass was seen to have a definite fibrous-looking capsule and to contain numerous smaller cysts, varying in size from a pea to an olive. Some of the cysts contained clear fluid, but the greater number held a yellowish-brown gelatinous substance, on removing which other smaller cysts were seen projecting from the inner walls. The tissue between the cysts varied in amount in different places and had a fleshy appearance.

Microscopical appearances.—Microscopically the cystic spaces were lined by columnar epithelium, but from some of the larger spaces the epithelial lining had entirely disappeared. The homogeneous material which filled the spaces stained very imperfectly. The tissues between the spaces consisted of a very cellular fibro-cellular stroma in which were seen spindle cells, round cells, and cells with large oval nuclei. Mr. John Murray paid great attention at the time to the microscopical examination, and had kept by him sections which he was able to produce on the occasion of my clinical lecture last year. Mr. Foulerton included this case in his account of columnar-celled carcinoma of the testicle, and remarked that although the formation of cartilage was not observed, there was present the mucoid or myxomatous change in the fibrous stroma which is a stage preliminary to the development of cartilage.

Subsequent history.—On July 10th, 1895, Captain —— returned complaining of constipation, and stating that without taking medicine he could get no action whatever of the bowels for several successive days. He was readmitted and was ordered a senna draught and a little blue pill and colocynth. He remained three days in hospital, during which his bowels acted regularly and freely every day. He returned to India and took up his duties as a soldier, but in 1897 he was again back in England, invalided home on account of chronic constipation and abdominal pains. He was in a very neurotic state. On May 30th, 1897, he entered a nursing home and I opened his abdomen and separated numerous adhesions between different coils of intestine, and between the small intestine and the parietal peritoneum, as well as between the omentum and parietes in front. The omentum was dragging on the transverse colon, pulling it downwards. The patient made an easy recovery, except for a small sinus in the line of the scar, which healed at once after a deep suture escaped on July 15th, 1897. He again returned to India and resumed his duties. I had seen him in 1899, and have notes of two or three consultations in the autumn of that year when he as usual complained of abdominal pains; but I could not detect any abdominal tumour. At some time between this date and March, 1901, but exactly when is unknown to me, he was operated upon in India for "acute intestinal obstruction," and a large growth was found within the abdomen which it was impossible to remove. He recovered from the exploratory operation and the intestinal obstruction and was immediately invalided home. When I saw him on his arrival in 1901 I could find no abdominal tumour; in fact, he seemed in better condition than I had usually seen him, and after staying in England until the beginning of January, 1902, he again went back to India. He, however, subsequently came to England on invalid leave, and I saw him several times from April onwards in 1903, as he was home for six months in that year. At this time he was drugging himself with morphia; he always complained more or less of dyspeptic troubles—flatulence, intestinal distension, griping pains, and obstinate constipation. He had suffered in the same way before he underwent any abdominal operation, and he was always very neurasthenic; but these symptoms were more pronounced some time after the first operation than ever before, though they were greatly relieved by the detachment of adhesions in May, 1897.

Further and final report of the case from Indian medical officers.—On Nov. 23rd, 1904, Captain E. J. O'Meara, F.R.C.S.Eng., I.M.S., wrote to me as follows:—

> "Captain —— came under my care in March or April, 1901, for acute intestinal obstruction. The abdomen was opened" by Colonel Joubert, "but it was found impossible to deal with the growth on account of its large size. Shortly after this the patient was invalided home, but returned after a few months very angry with me; as he said that you, after consultation with Mr. Watson Cheyne, told him that there was nothing the matter with him" (i.e., that there was no tumour so far as we could detect). "I also saw remarks by you on the case in the *Clinical Journal* about April, 1902. The growth must have diminished very rapidly indeed after the operation in 1901, as at the time of the operation it practically filled the abdomen. I enclose Captain Birdwood's letter; it will doubtless be of interest to you."

The remarks referred to in Captain O'Meara's letter as having been made by me about the case were published in the *Clinical Journal* of March 19th, 1902, in the report of a discussion on the treatment of inoperable cancer at the West London Medico-Chirurgical Society. I was calling attention to the fact that cases are from time to time condemned by competent and able clinicians as inoperable cancer which from their subsequent course would seem not really to have been malignant at all; and I was giving instances of such which had come under my own observation. In alluding to Captain ——'s case as that of an "Indian military officer," I said: "In the beginning of the year 1901 his abdomen was opened in India on account of obstinate constipation, and the wound was closed, as the surgeons found a condition which they reported to be malignant, and inoperable; and he was sent home to England to die. The mass found by these surgeons was, I believe, nothing more than the condensed and matted adhesions following the former operations; at any rate, this officer has just lately (January, 1902) returned to his duties in India fitter than he had done for some years."

My only informant about the operation which had recently been performed upon him in India was the patient himself. I had received no report of it from the surgeon who had performed it, or from anyone else who was present at the operation. Had I possessed an authoritative account of the operation I should, no doubt, have spoken of the case as one of those remarkable, rare, but attested instances in which a malignant tumour has spontaneously vanished, either after, or independently of, an operation. The sceptical tone of my remarks at the time, however, serves to show how completely the tumour had shrunk or vanished, as it was absolutely impossible of detection on the most careful palpation and percussion. Moreover, two years after the discovery in India of this large inoperable tumour Captain —— told me when in England in 1903 that he was contemplating a second marriage. He was feeling well enough to deem himself justified to take this step; and I have in my possession a telegram and a long letter sent to me from India by him in May, 1904, in reference to this projected marriage.

But the end was not so very far off. The marriage did not take place for reasons immaterial in this connexion. When Captain O'Meara wrote to me on Nov. 23rd, 1904, he enclosed a letter from Captain G. T. Birdwood, I.M.S., written

to Colonel C. H. De La Ferte Joubert, I.M.S., on Oct. 7th of the same year, which runs:—

"You will be sorry to hear that Captain —— died the day before yesterday. The operation was apparently successful, for next day he passed a very large motion. Colonel Barratt made a post mortem. There was a tumour the size of a cocoanut growing from the spine, with numerous adhesions in every direction matting down the intestines. The gut immediately behind the tumour was gangrenous, and packed with hard fæcal scybalæ. The anastomosis must have taken place from a coil just above the gangrenous portion to a coil below the tumour. If the gut had not been gangrenous he might have lived a month or two, but the growth was increasing so rapidly that the end would not have been far off. As you had previously operated upon him I thought you would like to know how the case ended."

Colonel Joubert himself adds this comment to Captain Birdwood's letter:—

"The growth was about that size, or larger when we operated in 1901, and I felt it so big when I was in Agra in July last. Birdwood operated to relieve obstruction, and made an anastomosis. It has been a very irregular case for years past.—C. H. J."

No information is given as to the nature of the "tumour."

CASE 2.—In December, 1910, Mr. ——, aged 46, engaged in mercantile business in Calcutta, consulted me on account of pyuria and coli bacilluria. He told me that about 12 years ago he had undergone castration for a tumour of the right testicle. Whilst he was under my treatment I received a letter from Dr. Adrian Caddy, F.R.C.S., of Calcutta, dated Feb. 1st, 1911, from which I abstract the following:—

"We are writing to you concerning a patient of ours, Mr. ——, who has been under our care for several years past. My brother, Dr. Arnold Caddy, removed Mr. ——'s testicle for chondro-carcinoma of that organ about ten years ago. I may say that he published the case in the 'Annals of Surgery' at the time. Since that time Mr. —— has kept in good health until June last, when he developed a long-continued fever of a typhoid character which lasted several weeks, and which he had when he was put on board a ship for England. After about three weeks of fever he developed pyuria, which I believe has lasted ever since; previous to his illness he had a gleet. We X rayed him and found nothing. A pathologist here found bacillus coli infection in his urine, and made a vaccine which, injected into him (the patient) unfortunately seemed to make him worse, and so was not persisted in at the patient's request; a guinea-pig was inoculated with urine but with negative results. ..... All the time we were fearing a late recurrence of the chondro-sarcoma, somewhere in the urinary tract, &c."

Disregarding the important and interesting subject of coli-bacilluria my reason for relating this case is because of its association histologically, pathologically, and clinically, with the subject of columnar carcinoma, or adeno-sarcoma of the testis, and thus with Case 1 just previously related. From the account in the "Annals of Surgery" of 1899 (Vol. II., p. 210) I have abstracted the following notes:—

In December, 1894, when Mr. —— was 29 years of age, he was struck in the right testis by a cricket-ball. Considerable pain at the time was followed in a week by some hardness of the lower end of the testicle. This hardness remained without change until October, 1895, when the testis began to enlarge, and the hardness to spread upwards. In September, 1896, the testis was the size of a duck's egg, painless, hard, and somewhat larger at the upper end than elsewhere. And so it remained, unaltered, until June, 1898, when the testis became painful and tender. A fortnight later the organ began suddenly to increase in size. On Dec. 17th, 1898, the testis was excised. It was the size of a closed fist. The spermatic cord was not thickened. No lymph glands could be felt.

On vertical section the whole mass appeared to be a new growth, no testicular tissue being apparent. At the upper and back part a nodule of cartilage the size of a nutmeg was cut through.

Microscopical appearances.—A microscopic examination was made by Major J. F. Evans, the professor of pathology at the Calcutta Medical College, who pronounced the growth to be a chondro-carcinoma. The cartilage was in the neighbourhood of the epididymis, and was surrounded and interrupted by many cysts lined by columnar epithelium. Professor Evans tells that the microscopic sections of this growth correspond with the description of chondro-carcinoma of the testis (the only description he had been able to find at that date) given by Ziegler in his "Special Pathological Anatomy," published in 1897. Professor Evans was about to publish a paper on the pathology of this chondro-carcinomatous testis when unhappily he died in March, 1899, of bubonic plague which he contracted when making autopsies on several cases of this disease.

Mr. Foulerton has referred to Dr. Arnold Caddy's report of this case as published in the *Indian Medical Gazette*. Its clinical history, taken with the microscopic picture of the pathological anatomy of the growth, is of great importance. For three and a half years the disease seems to have remained quiescent in the testis, and though 12 years have elapsed since the growth was removed the patient still remains without any obvious sign of recurrence. Such a history would give the false impression that the tumour is benign, but the microscopic appearances clearly prove it to belong to the same malignant group as Case 1, and both cases alike to the same histological class as many other cases which have pursued a rapidly growing and early recurring history.

Both the cases which I have related show that columnar carcinoma of the testicle may remain quiescent, or the patient may be absolutely free of recurrence for many years; but the expectation is always that the disease will ultimately recur, though it may be only after a long time. When, therefore, this fact is taken into account, together with two others—namely, (1) that it is impossible to detect the early secondary infection of the ilio-lumbar lymph-glands; and (2) that the extirpation of these glands, when obviously enlarged subsequent to removal of the testis, is an operation of magnitude and severity, and has been very discouraging hitherto in its results—when, I say, these facts are taken into consideration, we may well be led to hope that the practice of the "radical" or "improved" method of excision of the testis may prove to be successful.

So far, however, in the 17 cases reported of this "improved" operation, there is little, if any, foundation for such hope. In some of the operations the affected glands could not be removed, or, in other words, the "improved" method was found to be impracticable; in other cases in which the glands were successfully removed at the time, the disease soon returned; whilst in the rest insufficient time has elapsed since the operation to permit of any conclusion being drawn as to the ultimate result. Still, hope need not necessarily perish because as yet little, if any, encouragement can be derived from the very limited existing experience. Meanwhile the low malignancy of carcinoma testis, and the long histories of such cases as I have recorded will often afford a prospect to any given patient of prolonged or entire immunity after the testis and cord have been excised by the old method.

THE CAUSATION AND PREVENTION OF CERTAIN TOXIC SYMPTOMS FOLLOWING THE ADMINISTRATION OF SALVARSAN.

BY JAMES McINTOSH, M.D. ABERD.,
GROCERS' RESEARCH SCHOLAR;
PAUL FILDES, M.B., B.C. CANTAB.,
ASSISTANT BACTERIOLOGIST TO THE LONDON HOSPITAL;
AND
H. DEARDEN, M.R.C.S. ENG., L.R.C.P. LOND.
(*From the Bacteriological Laboratory of the London Hospital*, Dr. WILLIAM BULLOCH.)

IT is now generally recognised that intravenous injections of salvarsan are followed in most cases by immediate symptoms of toxicity, these symptoms manifesting themselves as a rise of temperature frequently accompanied by a well-marked rigor and general malaise. Clinically these symptoms have been so constant that we have been led to describe them as "the normal accompanying effect of '606.'" Their onset is between half an hour and one hour after the injection, but it is sometimes even earlier. The temperature rises rapidly and the patient experiences a sensation of cold, shivers, or is attacked by rigors which may last for so long as two hours. The summit of the fever curve usually attains to 102°–103° F., but it has been observed as high as 105°; this point is reached between one and four hours after the injection. Cyanosis is frequently present, and indeed may be very pronounced. Vomiting is common, as also are headaches and pains in the back, the cardio-vascular system, on the other hand, not being markedly disturbed. The acute symptoms are short-lived; about four hours after the injection, accompanied by sweating, the temperature commences to fall. The decline is less rapid than the rise, the

normal limit being reached eight to ten hours after the injection. The patient is now comfortable, and, indeed, the disturbance, however brisk, is so fleeting that ill-effects are seldom complained of on the following day.

It is the causation and prevention of these symptoms that we propose to discuss.

So far as we ourselves were concerned it was quite exceptional to see an intravenous injection pass off without the occurrence of some toxic symptom; indeed, we may say that we had never observed a complete absence of fever when the temperature was taken hourly after the injection. On the other hand, we learned, both verbally and from the literature, that other observers did not experience toxic symptoms so frequently as we did, although undoubtedly they were present in the great majority of cases. This relative freedom from toxicity in the hands of some appeared to be important. It was often held that the rigors were an expression of the toxicity of salvarsan and that they varied in intensity and frequency according to the degree of susceptibility or insusceptibility to arsenic possessed by the particular patient. Clearly, however, it was impossible that one observer should be favoured with patients whose susceptibility to arsenic was minimal, while another should inject only the hypersensitive. The preparation could not be "organotropic" in the hands of one operator and not in the hands of the other. We, therefore, were led to suspect that in these cases it was the operator who was "organotropic" and not the salvarsan; in other words, we began to form the opinion that the occurrence of rigors and the other symptoms of toxicity were due to an error of technique and not to any characteristic of the salvarsan.

From a review of our own experience we arrived at a series of conclusions bearing on these symptoms which appeared to be beyond dispute.[1] We found that (1) the fever was higher and the toxic reaction more marked in secondary and tertiary syphilis than in primary or latent syphilis; (2) the symptoms occurred in non-syphilitic individuals, but not to such a marked extent; (3) the symptoms also occurred after intra-muscular injections, although in this case also to less extent. We were unable to find any common factor in these results except the presence of salvarsan, but for reasons already stated we were not disposed to accept this as the sole cause of the symptoms.

Of the various theories advanced, none could be entirely reconciled to the observed facts, although we were distinctly in favour of the suggestion first brought forward by Schreiber,[2] that the fever in secondary syphilis was the result of the liberation of large quantities of endotoxins from the destroyed spirochætæ.[3] In this view we were supported by the observation that the disappearance of the spirochætæ from chancres was closely connected in time with the height of the fever. This theory might account for the rise of temperature after intra-muscular injections, since this occurred most definitely only in secondary syphilis. The fact, however, that fever occurred after injections in non-syphilitic cases suggested that the injection as such was probably to blame; indeed, Marschalko[4] considered that the percentage of sodium chloride present in the saline solution was a matter of great importance. We have, on the other hand, detected no constant alteration in the toxic symptoms by varying the concentration of sodium chloride. Further, we were unable to accept the suggestion of Wechselmann[5] that the rigors were due to the growth of hæmolytic bacteria in the saline solution. He observed that in one section of his patients rigors were common, while in another they were uncommon. These two sections, males and females, were subjected to different conditions in that the saline used in the case of one section was boiled for a short time and kept ready for use in the incubator, while in the case of the other it was kept on ice. Those patients injected with the incubated saline solution reacted more markedly with toxic symptoms than the others, and further, the symptoms were lessened by a more thorough sterilisation. In our cases, however, there could be no question of a growth of bacteria in the saline solution, since this was always completely sterilised in the autoclave.

In his paper Wechselmann called attention to the work of Bingel,[6] unconnected with salvarsan, upon fever following subcutaneous and intravenous injections of saline solutions. This observer found that fever was elicited in man by subcutaneous and a few intravenous injections of normal saline solution, and that the result was not influenced by alterations in the concentration of sodium chloride. He found, however, that the occurrence of fever was largely diminished by the use of Ringer's solution. These observations appeared to be of the greatest importance, and we at once proceeded to verify them. As a result of our investigations already published[7] we concluded: (1) that every intravenous injection of normal saline solution was followed by symptoms of toxicity more or less severe, these symptoms being indistinguishable from those following the intravenous injection of salvarsan as already described; (2) that these toxic symptoms were very little less frequent after intravenous injections of Ringer's solution than after saline; and (3) that alteration in the concentration of sodium chloride did not affect the result. We therefore inclined to the belief that toxic substances were present in the distilled water used in the manufacture of the saline solution, and this belief was strengthened by previous observations made by one of us upon the toxic effects upon trypanosomes of certain samples of saline solution. It was then found that the toxic bodies could be eliminated from the distilled water by redistillation, and that saline solution prepared from such redistilled water was then innocuous to trypanosomes. Proceeding along these lines we observed that saline solution made from the toxic distilled water, but after redistillation, was entirely innocuous to man, its injection being followed by no symptoms. We had, therefore, eliminated certain toxic bodies from the water by redistillation, and saline solution so prepared after complete sterilisation could be kept indefinitely in a non-toxic condition.

The nature of the toxic substance was not clear; it might be a metallic poison derived from the block-tin still, or it might be a bacterial poison emanating from micro-organisms growing in the distilled water. In order to test whether the water was toxic when first distilled, or whether the toxicity developed later in the laboratory, water was collected direct from the still and immediately made into saline solution and autoclaved. Such water was found to be quite non-toxic, and therefore the occurrence of metallic poisons could be excluded. The experiment also showed, however, that the toxicity was not present at the time of distillation but developed later, and it clearly became necessary to investigate the laboratory distilled water for the presence of micro-organisms. From this investigation we obtained an unlooked-for result, finding no less than 180 millions in 300 c.c.—i.e., the usual dose of water administered with "606."

It was not easy to understand how these organisms, after being undoubtedly killed, could give rise to such marked symptoms. They were mostly non-pathogenic cocci and bacilli, and we were not acquainted with any bacterial toxin which could survive a temperature of 115° C. for 20 minutes in the autoclave. However, by means of a filter we removed these organisms from the water in such a way as to allow the passage of any hypothetical toxins, with the result that saline solution prepared in this way was found to be entirely deprived of its toxicity. We therefore concluded that the toxicity of saline solution was entirely due to the dead bodies of micro-organisms which had developed in the distilled water after distillation.*

Having thus demonstrated the toxicity of saline solution and indicated methods by which this toxicity might be eliminated, we applied the principle to the use of salvarsan. The results fully justified our expectations, and the six months following the original publication have been confirmatory. By the use of redistilled water in the manufacture of the saline solution we have eliminated the rigors and toxic effects described above as normally following an intravenous injection of "606," *except in the case of acute secondary syphilis* or in primary syphilis (very large chancres) just before the outbreak of the rash.† In latent or tertiary syphilis or in the later stages of secondary syphilis, as also in parasyphilitic and non-syphilitic individuals, the injection of maximal doses of "606" does not give rise to fever or toxic symptoms except in rare cases.

* Hort and Penfold have recently (THE LANCET, 1912, vol. i., p. 579) questioned whether "salvarsan fever" is due to unbroken bacterial proteins, but allowed that it *may* be due to "degradation products" of such proteins. The difference between our views rests chiefly upon the result of injections of filtrates from bacterial suspensions. These they found toxic, we nontoxic. It is necessary to await the publication of precise technical details.

† In a recent paper Stümpke[8] has sought to show that fever is still invariable after the injection of salvarsan dissolved in re-distilled water, but it must be noticed that all his patients were in the acute stage of the disease.

Since the completion of these observations, which may be examined in more detail in the original publication,[7] we have made further investigations on rabbits in confirmation of the suggested microbic origin of the particular symptoms which we have described. The rabbit is well suited for experiments of this nature, because its temperature is stable and does not vary within narrow limits if due care is taken to keep it in constant surroundings. On the other hand, the heat-regulating mechanism of the guinea-pig is so labile that observations upon its temperature under the conditions of the experiment were quite without value. As a result of many readings the normal temperature of the rabbit taken in the rectum was found to vary between 100° and 101·5° when the animal was kept at room temperature in the autumn.

EXPERIMENT 1. *Showing the influence of sterile normal saline solution injected intravenously into the rabbit.*—The saline solution was made with pure sodium chloride (0·9 per cent.) and ordinary distilled water—sterilisation in the autoclave. The same sample of distilled water stored in a number of flasks was used throughout the experiments. The quantity injected intravenously was 50 c.c., our ordinary salvarsan injection apparatus[9] being used.

Rabbit.	Temp. before injection.	Temp. 2 hours after.
1	100·1° F.	104·2° F.
2	100·2°	103·8°

Next day the temperatures were normal. Injections of ordinary saline solution, therefore, produce fever in rabbits.

EXPERIMENT 2. *Showing the influence of bacterium-free saline solution injected intravenously.*—The technique of this experiment only differed from that of Experiment 1 in the nature of the distilled water used. Instead of this being derived from the supply kept in the laboratory it was collected direct from the still and immediately made into saline solution and sterilised.

Rabbit.	Temp. before injection.	Temp. 2 hours after.	Temp. 4 hours after.
3	100·4° F.	100·4° F.	101·0° F.
4	100·6°	100·6°	100·4°

Injections of microbe-free saline solution thus did not give rise to fever. Both these observations were repeated as follows:—

Rabbit.	Saline solution.	Temp. before injection.	Temp. 2½ hours after.
5	Bacterium free	101·0° F.	101·4° F.
6	" "	100·8°	101·6°
7	Ordinary saline	101·2°	103·2°
8	" "	101·4°	103·0°

EXPERIMENT 3. *Showing the influence on the rabbit's temperature of various bacteria isolated from distilled water when sterilised and injected intravenously.*—We have already mentioned that the distilled water which we used in our observations on man contained 180 million microbes per 300 c.c. Plate cultures were again made from the distilled water and incubated at room temperature. After several days the predominant types were selected and transferred to separate tubes labelled A, B, and C. These organisms were respectively two varieties of Gram-negative cocci and one Gram-negative bacillus. Emulsions of the cultures were then prepared and sterilised in the autoclave at 115° C. for 20 minutes. The emulsions were diluted with bacterium-free saline solution, so that the number of microbes corresponded to the number present in ordinary saline solution (180 million per 300 c.c.). Technique of injection as before.

Rabbit.	Injection.	Temp. before injection.	Temp. 2 hours after.
9	50 c.c. bacterium-free saline + 30 million microbes A	100·2° F.	103·0° F.
10	Do. + 30 million microbes B	100·4°	101·4°
11	Do. + 30 million microbes C	100·1°	102·2°
12	Do. without microbes	99·8°	99·8°

The addition of microbes isolated from distilled water can render a microbe-free saline toxic.

EXPERIMENT 4. *Showing that the dead microbes themselves and not endotoxins are the cause of the fever.*—20 c.c. of the thick emulsions (150 million per c.c.) were passed through small Doulton white filters of 3 c.c. capacity, so that sufficient fluid could be passed through to compensate for any loss of "endotoxins" by adsorption by the filter. 1 c.c. of the filtrate containing the "endotoxins" of 150 million microbes was then diluted with 50 c.c. of bacterium-free saline and injected.

Rabbit.	Injection.	Temp. before injection.	Temp. 2 hours after.
13	50 c.c. of bacterium-free saline solution + 1 c.c. of filtrate B	100·7° F.	100·8° F.
14	Do. + 1 c.c. of filtrate C	101·0°	101·0°
15	Do. + 1 c.c. of emulsion B unfiltered	100·3°	104·2°

Thus the fever is produced by the bacterium and not by any hypothetical endotoxin.

EXPERIMENT 5. *Is a second injection of saline solution followed by increased toxic effects?*—The question of increased toxic effect after repeated injections of saline solution and in particular after salvarsan injections is of great practical importance. In the literature several instances have been recorded in which severe symptoms followed a second injection of salvarsan, although the first injection followed a normal course. Two factors might be involved in this phenomenon—the salvarsan (which will be referred to later) and the bacterial contents of the saline. If the latter were the cause of increased toxicity after the second injection, it would be expected that such symptoms would be of an anaphylactic nature. We have, however, been unable to demonstrate any increased toxic effects by the repeated injection into rabbits of the number of micro-organisms present in ordinary saline solution. Rabbits 1 and 2 were reinjected with 50 c.c. of ordinary saline solution 12 days after the first injection (*vide* Experiment 1, *supra*).

Rabbit.	Temp. before.	Temp. 2 hours after.
1	100·4° F.	103·8° F.
2	100·0°	104·0°

Rabbits were then injected with 50 c.c. of ordinary saline solution, and 17 days later with 150 million microbes A, B, and C (*vide supra*) diluted with re-distilled water saline solution to 50 c.c.

Rabbit.	Temp. after first injection.	Second injection.	Temp. after second injection.
16	103·2° F.	Microbes A	102·2° F.
17	102·4°	" B	104·2°
18	103·6°	" C	104·5°
19	104·0°	Re-distilled saline alone	101·2°

No anaphylactic symptoms were observed.

To recapitulate these experiments on rabbits:—

1. The injection of sterile laboratory saline solution is toxic.

2. The injection of microbe-free saline solution is non-toxic.

3. The addition of dead bacteria isolated from the laboratory saline solution before sterilisation to the non-toxic microbe-free saline solution renders the latter toxic.

4. The toxic effect is due to the microbes themselves and not to endotoxins derived from them.

5. The toxic effect is not due to any one variety of microbe.

6. No increased toxicity or anaphylaxis was found to follow a second injection of the microbes.

As a result of the researches which have been carried out under Professor Ehrlich's guidance upon the relation of water bacteria to fever after salvarsan injections, the following explanation has been suggested. Yakimoff and Yakimoff[9] have shown that salvarsan injected into animals along with various dead bacteria is more toxic than salvarsan alone; that is to say, when such bacteria are present, a smaller dose of salvarsan will suffice to kill the animal than when no bacteria are present. It is considered that this increase in toxicity is the cause of the rigors and toxic symptoms which are observed. The salvarsan is more organotropic in the presence of bacterial toxins and less parasitotropic, and it thus follows that salvarsan given in toxic saline solution is a less efficient spirochæticidal remedy than salvarsan dissolved in non-toxic saline solution. As regards the increased toxic symptoms usually noticed in secondary syphilis, the same argument will apply. It is invariably found that a dose of a chemotherapeutic substance which will be readily borne by a normal animal will kill a similar animal infected with trypanosomes or spirochætæ; in other words, the substance is relatively more toxic in an infected animal than in an uninfected. Yakimoff and Yakimoff have definitely shown that the toxicity of salvarsan tested upon rabbits infected with trypanosomes is proportionate to the number of trypanosomes present in the rabbits. Similarly the toxicity of salvarsan in syphilis is at its maximum when the number of spirochætæ is at the maximum—i.e., in secondary syphilis. Increased reactions may therefore be expected in such cases.

As a result of our investigations we are of opinion that this theory does not explain adequately the phenomena observed by us. We have demonstrated that all the typical symptoms of a salvarsan injection may be produced by the injection of the actual saline solution without the addition of salvarsan, and that the occurrence of these symptoms after salvarsan injections may be prevented by suitable treatment of the saline solution. Thus salvarsan cannot have any effect primarily or secondarily upon the rigors. These occur as a result of the bacterial contamination of the water with or without the presence of salvarsan. In our view the toxicity of this substance is not increased by the addition of bacterial toxins. In a "normal" individual the toxicity of salvarsan is practically *nil*, whether bacterial toxins are present or not. This view may be tabulated as follows:—

Toxicity of saline solution	= 0
" saline solution + water microbes	= 1000
" saline solution + salvarsan	= 10 (normally)
" saline solution + microbes + salvarsan	= 1010

The precise mechanism by which the dead bacteria exert this toxic effect is doubtful, but from the similarity between the symptoms it may be supposed that the bacteria exert an

action upon the body similar to that produced by the intravenous injection of various foreign proteid substances as described by Vaughan, Cumming, and Wright.[10] The experiments of Yakimoff and Yakimoff might indeed explain the phenomenon of fever occurring in secondary syphilis after the exhibition of salvarsan dissolved in microbe-free saline solution. The toxicity of the salvarsan might be increased by the larger number of spirochætæ in the sense that a smaller dose may kill a secondary syphilitic than would be necessary in the case of a latent syphilitic. On the other hand, it might be objected that the rigors and transient toxic symptoms observed are not in any way suggestive of arsenical poisoning. The type of temperature curve suggests that the phenomenon is an artificial crisis such as is produced in relapsing fever by the administration of salvarsan, and the rise of temperature in this case would be due to the liberation of endotoxins from the dead spirochætæ. To this view we still adhere. The rigors and toxic symptoms which occur in secondary syphilis must be different in origin from those occurring in other forms of syphilis, because they continue in spite of the use of microbe-free saline solution. They seldom occur later than the first week or two after the outbreak of the rash, no doubt owing to the fact that, after the first invasion of the system, the great majority of the spirochætæ are rapidly destroyed by natural processes. Further, there are slight clinical differences between the "saline" rigors and those occurring in secondary syphilis after the use of salvarsan dissolved in microbe-free saline solution. The latter occur rather later after the injection, the temperature seldom starting to rise for three or four hours. This is in support of the endotoxin view, since we have found that there is no disappearance of spirochætæ from chancres for four or five hours after an injection. There is a latent period first and then the destruction of the spirochætæ is found to run parallel with the height of the fever, so that, by the time the normal limit is again attained, no spirochætæ can be detected.

Thus we conclude that the phenomena of rigors in syphilis treated by salvarsan dissolved in toxic saline solution and rigors occurring in secondary syphilis after the use of non-toxic saline solution are due to two entirely different factors. In the first case they are due to the dead bacteria in the water acting as a foreign proteid, while in the second they are due to bodies liberated from the spirochætæ after their destruction.

The elimination of the more excessive toxic symptoms by the use of bacterium-free saline solution is a matter of some value; so much so that Professor Ehrlich urges that everyone who makes use of these injections should distil his own water. This is undoubtedly desirable. Commercial distilled water, as shown by P. Th. Müller,[11] is often grossly contaminated with bacteria, and the difficulties in the preparation of a *certainly* pure saline solution are sufficiently great to render the transfer of the responsibility of manufacture unsatisfactory. It will be clear that in the absence of toxic symptoms due to the water the slight toxicity due to the salvarsan as such will be more easily borne, and larger doses may therefore be used. For the last six months we have never given an adult less than the maximum (0·6 grm.) at one time. Again, the relative contra-indications to the use of salvarsan lose much of their importance. The cardio-vascular system is not now put to the test in any way so severely as formerly, neither is a diseased nervous system so prone to develop stormy local "reactions." The exacerbations of lightning pains, headaches, and similar symptoms in such patients have been thought to represent a "local reaction" due to the effect of "606" upon the spirochætæ; since using bacterium-free saline solution, however, we have not observed these occurrences. We therefore consider that the chances and risks attending the treatment of tabetics and general paralytics, if such treatment is considered to have sufficient value, may be appraised less highly than was formerly the case.

It must not, however, be supposed that with satisfactory saline solution salvarsan becomes an entirely indifferent substance in every case; on the contrary, it is now more possible to recognise its own measure of toxicity. Formerly it was the general rule for the toxic symptoms to be less marked after second or third injections. Now we are of opinion that such toxic symptoms as may be met with may become progressively more marked after repetition of the dose at short intervals. This, without doubt, is not the result of any process which may be described as "anaphylaxis," but simply represents the accumulative effect of large doses of arsenic. The symptoms which we have met with are usually most marked in the gastro-intestinal system, and it is interesting to note that the recent work of Kochmann[12] has shown hæmorrhagic gastritis and enteritis to be the prevailing lesion in animals after fatal doses of "606." These toxic symptoms are by no means invariable, and extremely rare after first injections. The relative harmlessness of the drug, however, has not led us to relax any of the precautions which we have formerly adopted. We never administer "ambulatory treatment."

The practical application of these principles is not devoid of difficulty. In order to ensure as far as possible an absence of toxicity, the preparation of the water must be conducted with the greatest possible care. All vessels must be absolutely clean. The water must be collected direct from the still, and immediately made into saline solution, and *sterilised* in the most complete bacteriological sense. When once a flask has been opened the contents must be used at once, remnants cannot be preserved in the ice chest for future use.

In conclusion, we wish to touch briefly upon another aspect of the toxic saline solution.

It is of general interest to record the cases of death which have followed the administration of salvarsan; from such records luminous conclusions may be, and have been, drawn. THE LANCET itself has recently referred to several of these cases in its "annotations." From many of the reports, we think, a reasonable person could hardly avoid gathering the impression that salvarsan is a dangerous substance and that fatal results have frequently followed its administration. Incidentally the suggestion is often present that such fatal results are hushed up by salvarsan enthusiasts in order that the public may not recoil from the risks of treatment. These suggestions emanate from mercury or hektin enthusiasts. Anyone reviewing the incidents which have surrounded salvarsan since its introduction might reasonably turn from their contemplation with feelings of disgust. Thus we read in the *Times* under the heading "Preparation 606" the following:—

> Paris, Feb. 7.—Professor Gaucher has reported to the Academy of Medicine that numerous deaths have occurred in France, Germany, Persia, and Rumania through the employment of the remedy known as "606," the patients dying in a state of coma after a few injections. Professor Gaucher also complains of attempts to hush up such fatalities in France, and insists that the remedy is deadly and of small therapeutic efficiency.

We assert that the impression left by this statement upon the great majority of persons will be false.

Turning to the other side of the question, we find that writers of greater judgment have advised caution in the use of salvarsan or have even presented a volume of objection to it. Such papers have been published in THE LANCET. It appears to us, however, that many of these objections are open to criticism in that they presume that a death obviously following an intravenous injection of salvarsan is necessarily *due* to this chemical substance. It is quite clear that when one refers to an "injection of salvarsan" one makes use of a loose expression. The injection consists of water, sodium chloride, sodium hydrate, and usually micro-organisms in addition to salvarsan. As a result of our observations we have come to the legitimate conclusion that these micro-organisms being the cause of the severe reactions which are sometimes met with are also the cause of a number of deaths which have been recorded. Such deaths are, therefore, preventable and not due to salvarsan. We do not think that the microbes are the cause of all deaths following salvarsan; there are, no doubt, other factors; we, however, assert without fear of contradiction that the number of deaths and the degree of toxic results will vary largely with the skill of the operator or the facilities open to him. We look upon it as ridiculous to compare the facilities of Persia at the present day with those of Europe, and equally ridiculous to quote results alleged to have been obtained in that country as evidence either against or for the use of salvarsan elsewhere.

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THE OPERATIVE TREATMENT OF GRAVES'S DISEASE.[1]

BY WILFRED TROTTER, M.S. LOND., F.R.C.S. ENG.,
ASSISTANT SURGEON, UNIVERSITY COLLEGE HOSPITAL, ETC.

MY contribution to this discussion is made with a good deal of diffidence and hesitation, because my experience of the operative treatment of Graves's disease is quite a small one, and I regard many of the most interesting problems of the subject as being so far from solution as not profitably to be entered upon here. Limited as one's experience is, and it is based on less than 50 cases, it has enabled one to come to certain rough practical conclusions which I will attempt briefly to put before you.

In comparing the medical and surgical treatments of Graves's disease it must be kept clearly in mind that the former does not attempt to influence directly the course of the disease, but is limited to putting the patient under favourable conditions while the disease runs its natural course, to end in arrest, spontaneous cure, or death. Operative treatment, on the other hand, is intended to be specific and to deal directly with the disease itself. It is clear, therefore, that we have to take into account not merely the comparative mortalities of the two methods, but also the length of the natural course of the disease and the condition of the patient during its progress. That the condition of a patient with severe Graves's disease is a very miserable one is common knowledge and is strikingly shown by the willingness of the patients to submit to operation, although they are rendered morbidly nervous by the disease and have usually been told before they come to the surgeon that the operation is an excessively dangerous one.

While I do not attempt to minimise the fact that the mortality of the operation is a considerable one, and possibly greater than that of the untreated disease, I am convinced that it would be justifiable to run a good deal of risk if it were the means of avoiding the years of miserable illness which are the lot of so many of the patients. It seems to me, therefore, that now we know the operation can be done without, at any rate, a very great mortality, the principal interest centres round the results rather than around the actual death-rate. I confess that to me discussions as to the relative death-rates of the untreated disease and of the operation—now we know that they are not widely different—seem to be comparatively useless, whereas the question of what relief can be obtained by operation is of the utmost importance. Unfortunately it is a most difficult question to solve in a way satisfactory to any fairly sceptical inquirer.

There is no disease more difficult to deal with statistically than exophthalmic goitre. Not only does the fully developed disease include certain well-defined types, but this central group is surrounded by very numerous forms which constitute an unbroken series, from unmistakable Graves's disease on the one hand to wholly non-toxic goitres on the other. It is the actual difficulty in drawing sharp lines of distinction which makes one look upon all statistics of the disease, surgical or medical, with a certain caution. The same ambiguity renders the statement of results equally difficult to interpret. Anyone who has some experience of the operative treatment knows that all grades of relief are met with, from total and permanent disappearance of all symptoms to the mere temporary subsidence which follows all operations. To divide the results into classes according to cure, much improvement, no improvement seems to me to put much too great a strain upon the judgment of the observer, and can only be of any considerable value when the material dealt with is of enormous size.

Again, the selection of a single objective sign such as pulse-rate, exophthalmos, or body weight as a measure of improvement is open to equally serious objections. Exophthalmos or tachycardia may, as is well known, become stereotyped and persist as an isolated phenomenon while the patient is perfectly well in every other respect. The body weight is at first sight a more valuable standard. Experience has shown me—though I do not believe the fact is generally recognised—that the body weight may show abnormal variation in *both* directions in Graves's disease—a pathological diminution being succeeded by a pathological increase, or *vice versâ*.

I may mention two cases which illustrate how fallacious a mere record of weight may be. In each of them the first sign of disease the patient noticed was that she became very fat. As the disease developed severe emaciation came on, and at the time of the operation both patients were extremely wasted, the weight of one, for example, having fallen from the abnormal figure of 11 st. to below 6 st. In each case after the operation the patient rapidly put on flesh, and there was great improvement in all the symptoms. Then a stage was reached when the patient was uncomfortably fat, and though much better than before yet had a distinct residuum of symptoms. A second operation was now done. Following it all the symptoms completely disappeared and the patient actually lost weight, the one in whose case I have given the figures losing over a stone and settling down to 10 st., her normal weight.

In view of these and similar facts it would, in my opinion, be useless for me to attempt to set the results of my small experience before you in tabular form, and I shall therefore merely try to give as frankly as I can such practical general conclusions as I have come to.

In the first place I propose to deal shortly with the question of mortality. The operation is one which shows a marked contrast with all other operations on the thyroid. Of these latter, as is well known, there is practically no death-rate. In a considerable experience of thyroid operations, excluding exophthalmic goitre but including a fair proportion of malignant and of intrathoracic goitres, I have never lost a case from the operation, and that, of course, is the common experience. Graves's disease, on the other hand, shows a mortality which was in the early days heavy and is even now considerable. The mortality, however, presents this encouraging peculiarity, that it can be, and invariably is, reduced as the surgeon acquires experience in the special requirements of the operation.

Taking the experience of representative surgeons on the continent, you will find that out of the first 50 cases of any given surgeon he will usually lose 5 as a direct result of the operation. This 10 per cent. mortality is usually considerably reduced in a surgeon's later work, and is no doubt to some extent to be regarded as a measure of the difficulty in acquiring the special kind of knowledge which goes to successful operating on these cases. I should be inclined to venture the opinion that a reduction to 5 per cent. should be generally possible, and I think that if that could be established as a standard figure the operation could be regarded as having made out at any rate a strong *primâ facie* case for being tried on a large scale.

In my own cases I have had a mortality of 10 per cent. This is undoubtedly, as I have already said, a high figure, and I may add by way of comment that it is based on a strict definition of the disease and an unwillingness to admit the larval forms except on very good evidence. Moreover, I have never felt justified in refusing to operate on a patient on account of the severity of the symptoms, for it is just the worst cases which are most urgently in need of relief, and for which if the operation is survived the most brilliant results can be attained.

Turning now to the results, one may begin with the general statement that all patients who get over the operation show some more or less permanent improvement, while in some all symptoms disappear as if by magic within a few days.

The two most definite statements one can make are, first, that patients with a small firm thyroid and marked symptoms scarcely ever show more than a temporary improvement. In them the operation is never seriously dangerous and never really satisfactory. The class is not a large one; I have dealt with not more than three or four definite cases.

Secondly, early mild cases—that is, cases without an abrupt onset, and showing a well-marked interval between the appearance of the physical signs and the development of the symptoms—invariably do well and are cured by a single operation. This class is well-defined, easy to identify, and allows of a positive prognosis being made. They constitute

[1] A paper read on Feb. 27th at a joint meeting of the Medical, Surgical, and Anæsthetics Sections of the Royal Society of Medicine.

about a quarter of my material. The operation seems entirely free of danger, and no such case has ever given me any anxiety.

The bulk of the cases—more than half my material—presented the disease in a severe form, the symptoms being marked as well as the physical signs and the goitre well developed. In such cases the improvement seems to vary with the amount of thyroid removed, and in about half of them is permanent and more or less complete. A second operation may be necessary because of a residuum of symptoms being left or because a recurrence takes place. I am inclined to say of this class that at least half can be permanently cured, though some need a second operation to secure this result. Of the rest, the disease can be greatly relieved or brought to a standstill in most.

Anything more detailed than this rough analysis would not, in my estimation, at the present time be of much value, but I should like to add that I am deliberately giving cautious and conservative estimates of the results.

To turn for a moment to the more technical aspects of the subject I should like to add a few words as to anæsthesia and technique of operating. I have used chloroform, open ether, ether by intravenous infusion, and local analgesia.

There seems to be a strong current of feeling at the present day against the use of chloroform in these cases, and I must admit that I have been influenced by it. There can be no doubt that the drug is more toxic than ether, and I feel that we are not justified in adding any risk, however small, to those necessarily contingent upon the operation. Still, I should like to say that in all my earlier cases chloroform was used and gave satisfactory results in some of the severest. The pulse-rate practically always diminished during the anæsthesia. Of course, such an anæsthetic should never be given except by the most accomplished expert, and I was fortunate in having for the most part the assistance of my friend Dr. Herbert Scharlieb. Ether by infusion I do not regard as presenting any considerable advantage except possibly in the elderly where pneumonia is to be feared.

At present I rely entirely upon ether by the open method in combination with atropine, morphia, and scopolamine, and in certain cases upon local analgesia. In connexion with the use of ether I should like to lay stress upon the importance of the preliminary atropine and upon the anæsthetist satisfying himself that this drug is acting before he begins the anæsthetic.

With regard to the actual operation, the choice of the time for its being done is in my opinion very important. I do not, however, acquiesce in the view that has been expressed that the patient should be submitted to several months' medical treatment as a preliminary. After all, this merely means watching the course of the disease for such a period, and I think that after some experience one can estimate the type of the disease and the course it is likely to follow without an expenditure of time so discouraging to the patient. As to the existence of an acute exacerbation, I should not hesitate to operate at such a time if I thought the patient's life was being endangered by the condition, though as a general rule it would be better to wait. Bronchitis, tonsillitis, and acutely inflamed cervical glands which are common complications I regard as absolutely contra-indicating operation for the time.

I have come to regard the mental state of the patient as perhaps the most important feature of the case in prognosis both as to the danger of operation and as to the final result. All the patients are nervous—that is, of course, part of the disease; but not all are frightened, and the really frightened patient is the most dangerous of all. To explain this, I do not think it necessary to invoke the changes in the cerebral cells of frightened animals described by Crile. A much simpler explanation seems to me available. Fear acts by precipitating an access of tachycardia during which the pulse-rate is perhaps uncountable for hours. In such circumstances the anæsthetic does not produce the usual steadying of the pulse, and the shock of the operation or the least amount of cyanosis from laryngeal spasm may be fatal. It is in these cases that the modern method of ether administration is so valuable. In hospital nowadays in my cases the patient is always anæsthetised in bed in the ward.

In the actual operation itself speed is no doubt valuable, but it is much less important than gentleness of manipulation which is absolutely indispensable. A large incision is essential to give easy access to the gland, and any kind of pulling is to be strictly avoided. In getting out the upper pole traction is very easily transmitted to the superior laryngeal nerve with the immediate result of causing laryngeal spasm and cyanosis—a most dangerous complication. Drainage is sometimes necessary when the anæsthetic is ether, to allow of the escape of blood. Otherwise I never use it, and I have not seen the slightest evidence that the thyroid secretion can cause symptoms by being absorbed from the wound.

The operation done in my cases has always been a partial thyroidectomy, usually the removal of one lobe and the isthmus.

The chief causes of death are shock during or immediately after the operation, an exacerbation of the disease within the next 24 hours, or pneumonia in the first week. I have lost two cases from shock, one from an acute exacerbation and one from pneumonia, and I am convinced by the study of that experience that the danger of the occurrence of such complications can be greatly reduced. This is to be effected by adequate mental and physical preparation of the patient, the choice of the best time for operating, the right anæsthetic for the given case, and the most careful avoidance of any traction upon or crushing of the gland. Such conclusions have been entirely borne out by my later experience.

Harley-street, W.

"ACHING THROAT."[1]

BY W. H. KELSON, M.D., B.S. LOND., F.R.C.S. ENG., D.P.H. CAMB.,

SURGEON AND PATHOLOGIST TO THE LONDON THROAT HOSPITAL.

IT is known to us all that there are certain affections of everyday occurrence which, while not having the immediate destructive effect upon life which appertains to the various forms of malignant disease, yet in a way have considerable importance, since by their persistent character and worrying nature they, as it were, gnaw their way into the comfort and happiness of their unlucky victims, constantly obtruding themselves on their consciousness and interfering with their pleasures like spectres at a feast. To one of these I have given the name of "aching throat," and I have decided to submit to your notice and consideration a few facts concerning it, because, although from childhood upwards we are all familiar with "sore-throat," yet aching throat, although more troublesome because more permanent, has not, I think, for some reason received the amount of attention it deserves.

The patients who come complaining of this trouble have generally arrived at, or are approaching, middle life, and the aching may vary very considerably in degree and somewhat in character. On examination they may be found to have the signs of chronic pharyngitis, with swelling, congestion, and catarrh, hypertrophy of the pharyngeal bands and granular patches, associated with coughing, hawking, and other efforts, varied and anomalous, some voluntary, others reflex, to clear the throat. Also there may be associated with it enlargement of the post-nasal, faucial, and lingual tonsils, the first least, the last most commonly, or nasal obstruction and discharge, also enlarged veins, bad teeth, and enlarged glands. All of these I have observed, but not one of them is pathognomonic, for in some of the worst cases one comes across they are absent. It is a somewhat curious fact, at least as far as my experience goes, that those cases of pharyngitis with swollen deeply congested pharynx, soft palate and uvula, with great irritability and excess of mucus, such as one sees often in persons indulging in excess of alcohol and tobacco, are but seldom troubled with aching throat, though dryness may be a marked symptom, and, on the other hand—indeed, in some of the worst cases—I have seen the pharynx when examined show very little or no evidence of disease at all.

As regards general condition, these patients are sometimes anæmic or their history or other parts of the body point to gouty or rheumatic tendencies; much more commonly, however, the patient suffers from dyspepsia of the flatulent variety which may have to be carefully inquired into, for if simply asked whether or no he suffers from indigestion the patient generally replies in the negative, as he has neither abdominal pain nor vomiting, but is distended with wind,

[1] A paper read before the Medical Society of London on Feb. 12th, 1912.

the belching up of which gives him considerable relief. In taking the history of these patients it is necessary to carefully analyse their feelings, or one of the cardinal signs may not be elicited—viz., that the aching, instead of being increased by swallowing food, as is the case in sore throat, is diminished thereby, as though the bolus in some way soothed and comforted the parts; swallowing liquids, however, may increase the aching.

In trying to throw some light on this symptom of aching throat, it will be well to first shortly consider two points—viz., the nerve supply to the naso-pharynx, pharynx, and upper part of œsophagus, and the vagueness of the sense of locality in this region.

Briefly taking the nerve supply first:—From above downwards, we find the posterior and external branches of the spheno-palatine ganglion of the superior maxillary together with the pharyngeal nerve and Vidian; the inferior maxillary by its various branches sensory and motor, the facial to certain muscles used in swallowing, the glossopharyngeal by numerous branches both muscular and to the mucous membrane, the pneumogastric, together with the spinal accessory, pharyngeal and laryngeal branches to mucous membrane and muscles of the throat, also to the external auditory meatus and œsophagus; the hypoglossal to the muscles of the pharynx, also the upper cervical spinal nerves and the sympathetic.

As regards sense of locality, one notes in the naso-pharynx and pharynx a vagueness which may be misleading. For instance, when one passes the Eustachian catheter through the nose in the ordinary way for deafness, and the point impinges on the orifice of the Eustachian tube above the palate, the patient is apt to point to a spot below the angle of the jaw and say that he feels it sticking in there. Again, this vagueness is well illustrated by the common incident of one's having to search for a bone sticking in the throat when the foreign body is generally found in quite a different part from that to which the patient had drawn our attention.

Also, how often we find pain due to disease of the throat referred to the ear. And patients suffering from malignant disease of the lower end of the œsophagus sometimes refer their discomfort to the cervical region, and I myself have had a case in which the chief symptoms were aching and unpleasant sensations referred to the throat and wasting. In this woman examination of the pharynx and œsophagus by the direct method showed nothing abnormal, but the patient died with disease of the liver.

I think, therefore, we may say without fear of contradiction that we have in this region not only an exceedingly rich and varied nerve-supply, but also find here a marked tendency to refer sensations to other areas than those actually stimulated.

One would like first to mention here that one knows very well that there are those who are inclined to somewhat pooh-pooh these cases and dismiss them under the general term "neurotic," and consider the aching allied to the constricted feelings of the throat and the lump rising or globus hystericus of true hysteria, but I cannot admit this explanation as satisfactory, for although aching throat may, of course, occur in a neurotic subject, and this explanation is apt to cross our minds if we find nothing locally, yet in the great majority of cases further examination fails to reveal other signs of hysteria.

Again, I would disassociate from the subject under discussion the aching pain felt by those who use their voices largely, such as teachers, clergymen, lecturers, public speakers, singers, and the like, and in whom it is associated with more or less hoarseness, as this seems allied to the so-called muscular aching from which many persons suffer after the immoderate use of any muscle in the body, leaving aside the question as to whether the pain be actually in the muscle itself or not; for aching throat occurs commonly in those who are not large voice users at all. On the other hand, they often complain that the aching is much worse when they get tired, using the term in the general sense. Here are some short notes of illustrative cases, private and hospital.

CASE 1.—The patient, a domestic servant, aged 34, attended hospital complaining of aching throat. She had six months previously suffered from tonsillitis, but volunteered the statement that this was quite a different pain from that which she had then, and noticed that taking food, instead of aggravating it as it did before, now gave temporary relief. On examination the throat looked anæmic, but beyond a slight enlargement of the faucial tonsils nothing else abnormal could be detected. Bowels very constipated. After advice as to diet and regulation of the bowels marked improvement took place, and patient ceased to attend.

CASE 2.—A healthy looking man, aged 40, came complaining of discomfort in the throat which he described as being of an aching and burning character. Asked as to its position he located the site of maximum intensity as being about the situation of the thyroid cartilage, but sometimes extending up to the ear and down to the sternum. On examination it was noted that the teeth were very much decayed and some granular patches present on the pharyngeal wall. Post-nasal space normal. Subsequently an examination by the direct method was made, but no abnormal appearances could be detected in the lower part of the pharynx or œsophagus. He suffered largely from flatulence, and belching gave some relief to the pain. No pain or difficulty in swallowing solid food, which gave immediate temporary relief. Liquids, however, he stated seemed to increase his discomfort. Advised to seek the assistance of a dentist and ordered a mixture containing rhubarb and soda. Reported later that he had been better for a time, but that the pain had returned. The granulations on the pharyngeal wall were now cauterized with the galvano-cautery, and when last seen he was free from the aching.

The next case does not, strictly speaking, belong to this category, but is introduced because of the side light it throws on the subject.

CASE 3.—A man, aged 45, came complaining of pain in the throat, sometimes of an aching, sometimes shooting in character, the seat of maximum intensity being in the region of the lesser cornu of the hyoid bone on the left side. No pain on swallowing, no symptoms of indigestion, no flatulence. Patient had previously tried numerous remedies and had the galvano-cautery applied to the pharynx, but the aching, though intermittent, never disappeared. On making a careful examination of the floor of the mouth I found a small salivary calculus in Wharton's duct, after the removal of which the pain permanently disappeared.

Since this occurrence I have made a point of examining carefully the floor of the mouth in all cases of aching throat, but in only one other case—viz., that of a lady about 50 years of age—have I ever succeeded in detecting anything in the shape of a salivary calculus.

CASE 4.—A man, 52 years of age, who had been abroad a good deal and had had malaria, complained of aching and throbbing feelings in the throat, and referred to the back of the palate as the seat of its maximum intensity, but he was somewhat vague on this point. He admitted that he suffered from indigestion and flatulence. On examination of the mouth and pharynx nothing abnormal was detected, nor did posterior rhinoscopy reveal any abnormality, though the airway through the nose was much interfered with by a deviated septum. The bowels were regulated and the indigestion treated with partial relief. Later on the nasal stenosis was relieved by a submucous resection operation, after which he expressed himself as feeling all right and ceased to attend.

CASE 5.—A housewife, aged 52, came complaining of trouble, some aching in the throat. She was very much worried by the pain, which she feared was due to cancer, from which her mother died. She swallowed food very slowly, and believed that certain articles of food made the pain worse afterwards, but she had no real difficulty in getting a bolus down. She got much flatulent distension and belching after food. Lingual tonsil enlarged but no other abnormality detected, nor did the direct examination of the œsophagus by means of Brüning's apparatus give evidence of anything pathological. Aperients and regulation of the diet produced improvement, but the case has shown marked relapsing tendencies.

Treatment.—I have already spoken of the local pathological conditions which I have found at different times associated with aching throat, but except, of course, in such a case as calculus I would strongly advise the avoidance of radical treatment in reference to these in the first instance; I think it better to be content with the ordinary cleansing nose washes, sprays and gargles containing chloride of sodium, biborate of sodium, and the bicarbonate, boric acid, potassium chlorate, and the like, for operation may prove disappointing in results both to surgeon and patient, and should therefore not be lightly undertaken nor advised since we cannot promise that removal of, say, a much enlarged lingual tonsil will cure aching throat, any more than the removal of polypi and other morbid conditions in the nose can be guaranteed to cure asthma.

At the same time one must give proper attention to general pathological conditions such as anæmia, though I must admit that the administration of arsenic and iron after due regulation of the bowels has not given the results hoped for as regards the throat discomfort, but has, in fact, been decidedly disappointing. I must say the same though in a less degree as regards medicines which have been found to give relief in gouty conditions—e.g., colchicum, piperazine, and salts of lithium and potassium, such as the citrate and bicarbonate.

As regards rheumatism, the fact that the pain closely resembles that which occurs in muscular rheumatism, and also since it has been repeatedly shown not only that acute pharyngitis and tonsillitis are often markedly benefited by anti-rheumatic remedies such as salicylate of soda and aspirin, but also that these diseases are often the immediate forerunners of acute rheumatism, one would be led to reasonably expect that these remedies would give relief in aching throat, but they have failed to do so in my hands.

On the other hand, a very large proportion of patients do

suffer, and have suffered, from chronic dyspepsia, and the appetite is commonly deficient, though occasionally it is the opposite. Although actual abdominal pain and vomiting are not common, retching frequently occurs with feelings of oppression and depression after food and eructations and distension with gas. The tongue may present morbid appearances, and a disagreeable taste is often present. Constipation is very common, diarrhœa rare.

What the exact relationship of aching throat is to this condition it is difficult to say, but that it is a very close one I am quite certain, and the best results are to be obtained by suitable treatment to the digestive organs, supplemented in some cases by operative treatment on the throat and nose.

In order to relieve the dyspepsia, first of all the teeth must be examined, and the patient referred to a good dentist if necessary. The diet must be inquired into and corrected. As regards the vexed question of alcohol, it certainly seems in some cases to bring on and in others to aggravate the aching, and I think, on the whole, these patients are better without it. I know of several cases in which washing out the stomach has completely relieved the aching, and consider it a most valuable form of treatment if not carried to excess.

Amongst the drugs which have proved most useful, gentian, calumba, strychnine, bicarbonate of soda, bismuth, magnesia, and charcoal are the principal. Constipation is very common and very troublesome, and if not relieved by careful dieting I have found the best drugs to use to be cascara, podophyllum, and sulphur; also small doses of mercury followed by a saline aperient are valuable. As a means of giving temporary relief massage is useful, and so is the galvanic current, but as permanent curative agents both are disappointing.

Smoking, if in excess, of course must be forbidden, but I have not been able to convince myself that moderate smoking was in itself a cause of aching throat, and certainly many women suffer from it who do not smoke at all, and one finds a good many patients who are anxious to get well and willingly abstain entirely from both tobacco and alcohol, and yet the pain continues.

In conclusion, to summarise matters a little we may say that experience has shown that aching throat is more commonly associated with flatulent dyspepsia than anything else, and this seems to act either by the formation of toxins, or possibly the aching may be a referred pain, such as that which occurs in the ear so commonly in disease of the larynx and upper part of the œsophagus. There may also, however, be local conditions which, if they do not actually cause, certainly accentuate aching throat; these must be sought out and dealt with in obstinate cases, not forgetting that the condition of the nose and accessory sinuses has a very distinct bearing on the state of the pharynx, as also have the teeth.

I will finish with one word of warning—viz., only after very careful examination must we arrive at our conclusions as to the cause of aching throat. To overlook malignant disease is disastrous.

Cavendish-place, W.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held on Feb. 22nd, at Caxton House, Westminster, with Sir Francis H. Champneys in the chair. Letters were considered from the superintendent of the Rescue and Maternity Homes, Moss Side, Manchester, and from Dr. C. W. Brown, of Manchester, asking that candidates whose certificates of attendance on cases and attendance during the lying-in period are not signed in accordance with the existing Rules may nevertheless be admitted to the next examination. The Board decided that the superintendent of the Rescue and Maternity Homes and Dr. Brown be informed that the candidates cannot be admitted to the examination, their schedules not having been signed in accordance with the Rules. Letters were considered from Dr. W. J. Howarth, county medical officer of Kent, reporting the suspension of two midwives for a period in excess of 24 hours, with the special circumstances in connexion with the cases. The Board directed that Dr. Howarth be thanked for his communications, and that he be informed that the action taken is approved by the Board. A letter was considered from a certified midwife inquiring as to the antiseptics to be used for cleansing the infant's eyelids as prescribed in Rule E, 2 (b). The Board decided that the reply be that the Board has designedly refrained from prescribing the use of specific antiseptics.

FURTHER EXPERIMENTS ON THE TREATMENT OF INOCULATED RAT SARCOMA AND OBSERVATIONS ON CERTAIN ACCOMPANYING BLOOD CHANGES.[1]

BY HELEN G. GRÜNBAUM, M.D. BIRM.,
AND
ALBERT S. GRÜNBAUM, M.D. CANTAB.
(*From the Department of Pathology of the University of Leeds.*)

IN a previous communication[2] we published the results of some experiments on the treatment of malignant disease in rats and mice, showing that by the injection of antivenom (horse) serum it was possible to effect regression of inoculated tumours in rats provided they did not exceed 1·5 cm. in diameter. We have found since that by the simultaneous administration of adrenalin with the antivenom serum (Pasteur Institute) yet larger growths can be made to disappear in these animals.

In this second series of 77 tumours there have been many which reached or exceeded 2 × 1 cm. in size. An idea of the relative size of such a tumour may be gained from the fact that the average weight of the animals used has been 40 grammes, and of the tumours 8 grammes—that is, a tumour equal to one-fifth of the body-weight may be cured.

Of these 77 tumours, 34 of the largest at the time of starting the experiment have been treated, while 43 were kept as controls. Of the 34 treated, 24 were cured, 3 became larger, while in 7 the animals died before the conclusion of the experiment. Of the 43 control tumours, only 8 regressed, the remaining 35 increased in size, while 12 animals died before the conclusion of the experiment. In other words, while 70 per cent. of the treated tumours regressed, only 18·6 per cent. of the untreated tumours did so, although the original selection of small tumours as controls placed them in a more favourable position for regression. Consequently there can be no doubt as to the effect of treatment. Moreover, in the untreated animals metastatic deposits were common, but in none of the animals which died while still under treatment were any metastatic deposits found.

There is a marked naked-eye difference between a treated and an untreated growth. The treated tumour is composed mainly of a necrotic core with only a narrow margin of tumour tissue proper. The width of this bounding layer depends upon the size of the tumour and the duration of the treatment. Of course, necrosis occurs also in the centre of many untreated tumours, but growth continues at the margin, so that there is always an increasing area of tumour tissue in growing tumours.

The facts mentioned above and in our previous communication, made it likely that there would be some difference in the hæmolytic content of the blood against cobra venom in susceptible and refractory animals respectively. We find that the anti-hæmolytic power of tumour-bearing rats is considerably less than that of refractory animals. Further, in uninoculated animals, it is possible by an examination of the anti-hæmolytic power of the blood to foretell with a considerable degree of accuracy whether on inoculation with sarcoma they will or will not "take." The method of our procedure will be given in detail in another paper, but we may mention here that inactivation of the serum to be tested is essential. Conversely, by diminishing the anti-hæmolytic power of otherwise refractory animals it is possible to render some of them temporarily susceptible—in one instance even after ten previous unsuccessful inoculations with the same tumour.

In the human subject the results are not so unequivocal. Infective conditions seem often to be accompanied by a considerable loss of anti-hæmolytic power to cobra venom, and all we can say is that serum from cases of sarcoma also assists hæmolysis, while that from normal individuals tends to inhibit it. This similarity with infective conditions may have a suggestive significance.

To summarise: 1. By an extension and modification of

[1] Part of a paper read before the Leeds and West Riding Medico-Chirurgical Society on Feb. 16th, 1912.
[2] THE LANCET, April 1st, 1911, p. 879.

previously described treatment it is possible to cure large inoculated sarcomata in rats in about 70 per cent. of cases. 2. The blood of "positive" animals with tumours does not prevent, but appears to assist, hæmolysis by cobra venom in vitro. 3. The blood of "negative" animals inhibits the hæmolytic action of cobra venom in vitro. 4. The blood of uninoculated rats, by the occurrence of inhibition or the reverse, indicates whether the animals will be refractory or susceptible to inoculation. 5. The blood of normal human individuals also possesses inhibitory properties, and these have been diminished in all the cases of sarcoma examined up to the present.

Note.—Since this paper was read one human inoperable recurring sarcoma has shown marked diminution in size and relief of symptoms under treatment.

Leeds.

THE TREATMENT OF TALIPES EQUINO-VARUS.[1]

BY EDRED M. CORNER, M.C. CANTAB., F.R.C.S. ENG.,
SURGEON AND LECTURER TO ST. THOMAS'S HOSPITAL AND TO THE CHILDREN'S HOSPITAL, GREAT ORMOND-STREET, ETC.

I INTEND considering with you to-day some methods of treating cases of deformity of the foot termed talipes. It is unfortunately a condition which is distressingly frequent, particularly calling for energetic treatment in hospital patients. Unfortunately, it is often associated with infantile paralysis, anterior poliomyelitis, so that it is impossible for us to reconstruct a perfect foot. All that can be done is to make the best of a "bad job."

In order to do this we must remember that the foot is of use in standing, walking, running, &c. This being its main function, the appearance of the "pretty, dainty, little foot" is very secondary and comparatively unimportant. Our aim and object should be in consequence to give the patient a serviceable foot upon which he can stand, walk, or run. Anything short of this is tantamount to imperfect success or failure.

There are, I think, two points in the treatment of talipes upon which all are agreed: the younger the age at which treatment is begun the better the chances of success, and that the treatment of talipes must not be short but must extend over a long period of months and years. Those who have most success in these cases are the surgeons who see and follow their patients for years; not those who do an operation and no more. This is in itself a very great difficulty, because every surgeon's hospital constitutes the great mine from which he extracts practice and experience; whilst at the same time it is very difficult, or almost impossible, to follow a hospital case for more than a short time. In consequence, our knowledge of the advantages and benefits derived from various modes of treating cases of talipes is largely deficient in evidence derived from cases years after treatment has been commenced. In consequence it is my intention to review before you such results as are obtainable.

Before doing so I would point out that it is right in a lecture delivered at a children's hospital to consider the treatment of growing subjects. In them the objective of all treatment is easily stated. It is to enable the foot to be used in the best way possible as a foot. For the treatment of deformities in growing subjects to be successful it must give a useful functional part, so that the constituents of the part grow under proper and normal functional conditions, such growth improving the part. But if treatment fails to give a good functional part, then the constituents of the part continue to grow under abnormal and improper conditions, their growth adapting itself to these abnormal conditions and making the deformity worse rather than improving it. The success of an operation lies in the ultimate usefulness of the part.

Massage, movement, and manipulation.—There is no doubt that this method forms the basis of all treatment for talipes. For its rationale and success it depends upon the concurrent growth of the constituents of the foot, the massage, movements, and manipulations making the ligaments, bones, and tendons adapt and fashion themselves properly as they grow, somewhat like a stick fixed in the ground enables a scarlet runner to grow properly. Thus by constant care, massage, and exercises the growth of the foot enables it to be moulded to the proper condition. If massage and exercises are neglected the growth of the foot continues under abnormal conditions and is, in consequence, improper, as is that of the scarlet runner which is not trained up a stick.

Amongst patients in the upper classes this treatment can be carried out thoroughly, but amongst hospital patients it will not be carried out. Losing in consequence the basis or backbone of treatment, it is obvious that hospital cases have to be treated differently from those patients in whom massage and exercise can be thoroughly done.

Massage, movement, and manipulation, aided possibly by such minor proceedings as tenotomies, form the basis of treatment for the first one to two years of life. If this treatment has been well carried out, and it is not a bad paralytic case, the child may then be able to get about properly on his feet. The subsequent growth of the feet, since he can use them properly, will also be proper, and complete the cure. But, as is so often the case amongst the poorer classes, massage, movement, and manipulation have not been successful in giving the child a foot on the sole of which he can walk. Then when the child has reached such an age as he can be taught to walk, it is the duty of the surgeon to give him a foot upon the sole of which he can walk. If this is done the subsequent growth of the foot will render the improvement permanent. But if the surgeon fails to give the child a foot on the sole of which he can walk, the case will not improve but go to the bad.

Cases must be most carefully watched even after apparently successful operations. How often do apparently successful cases come back after two to three years with the talipes imperfectly corrected. It can only be reiterated that the treatment of cases of talipes must be extended over years and not confined to the period of the operation. Success is attained by constant care, not by occasional treatment.

Tenotomies.—All tenotomies must be regarded as auxiliary proceedings which are not ends in themselves. The tendo Achillis is the tendon which is most often divided. Of late years it has been shown that the earlier movements and massage are begun in the treatment of fractures the quicker the recovery and the better the result. Recovery of power is often slow after tenotomies, so that it is often better to do the little operation of tendon-lengthening. The recovery is then quicker and more complete.

It must be clearly understood that all tenotomies and tendon-lengthenings are of no avail if not supplemented by other treatment. They are small and comparatively unimportant measures, merely accessory to the long treatment by massage and exercises.

Neurorrhaphies.—There is far too little known about nerve anastomoses in these cases for it to be possible than to do more than mention the method.

Tendon-graftings (tenorrhaphies).—This is one of the most useful and beneficial means of treating suitable cases of talipes. In the most successful class of cases the outer part of the tendo Achillis is attached to the peronei muscles. But two words of warning must be given: firstly, immediate and decided improvement must not be expected, even two years may elapse before success is attained; secondly, like tenotomies, tendon-graftings are merely adjuvants, so that treatment by massage and exercises must be persevered with throughout.

Osteotomies.—The only osteotomy at all often employed is one in which the tibia is divided horizontally just above the lower epiphysis. The fibula is then broken. The foot can then be rotated on the shaft of the tibia into the proper position it should occupy. Thus in talipes equinovarus with inverted adducted foot the toes can be turned out. Like tenotomies and tenorrhaphies this osteotomy is merely an adjuvant to the general treatment.

Ostrectomies.—This is not a pretty word, but it is merely meant to imply those operations in which bones are removed. Personally I regard them as most important means of treating talipes. For if the deformity has existed long enough for the bones to have become deformed, which is almost always so, as skiagraphs show us, there are then only two methods of reducing the deformity: either slowly, by the action of growth under treatment by massage and movements, or

[1] Based on a lecture delivered at the Children's Hospital, Great Ormond-street.

quickly, by means of an operation on the deformed bones. In hospital patients it is usual to prefer this latter method for reasons already stated.

Naturally our first inquiry is which tarsal bone is most affected, because towards such a bone we must first direct our attention. The answer to this question is decisive. The astragalus is deformed beyond all other bones of the foot. The most successful operations for talipes are directed to it. The neck of the bone has been divided, an osteotomy, with disappointing results. The head of the astragalus has been excised and the results ascertained to be unsatisfactory. The whole astragalus has been excised, and for a time this gave great satisfaction. But the ultimate results have been unsatisfactory, and the unsatisfactory foot perfectly typical. The foot was curved, the toes pointing inward, with a tendency for the calcaneum to turn under the tibia and lie on its outer side. From the functional point of view these were useful feet; but from the cosmetic point of view they failed.

The operation was extended and the anterior third of the calcaneum removed with the astragalus, and the foot put up in plaster in good position. The remote results of this proceeding were better than from an astragalectomy alone. But yet a further improvement was introduced. It was obvious that by preserving the ankle-joint a better functional foot could be secured. This was done by removing the head of the astragalus, the anterior part of the calcaneum, and the contiguous parts of the scaphoid and cuboid until the foot could be placed in good position. The results were disappointing, the probable explanation being that the mid-tarsal joints were destroyed. A return was therefore made to the removal of the astragalus and front part of the calcaneum, in which the ankle-joint and the mid-tarsal joints are thrown into one, rather than destroyed. In the present state of my experience and knowledge, I have found that this operation yields the best anatomical and physiological result in a foot the subject of the deformity of talipes equinovarus.

There remains a superlatively important item in the treatment to be mentioned. Massage, manipulation, and movements must be continued, in addition to standing, walking, running, skipping (with boot and irons if necessary); and the case watched for some years or until growth ceases and a satisfactory result is assured. Wrenchings under an anæsthetic, plaster-of-Paris splints, tenotomies may be required, and all idea that the big operation was final or that the need for these secondary operations reflects discredit on the original operator banished from the doctors' and relatives' minds. It is constant care and constant operations which bring about good results. Anything short of this is deservedly unsuccessful.

In conclusion, let me remind you that the period of life in which all deformities are most satisfactorily treated and corrected is that of childhood when rapid growth and active tissue changes are taking place.

Harley-street, W.

THE VALUE OF PNEUMOCOCCUS VACCINE IN THE TREATMENT OF PNEUMONIA.

BY NATHAN RAW, M.D. DURH., M.R.C.P. LOND., F.R.S. EDIN., D.P.H.,

PHYSICIAN, MILL ROAD INFIRMARY, LIVERPOOL.

I THINK all of us agree that there is something more to elucidate regarding the exact pathology and treatment of the pneumococcal infections. When we are called upon to attend a patient suffering from pneumonia we instinctively feel a sense of danger for the patient and a feeling of great uncertainty regarding the result. Even if all the symptoms are favourable and the patient feels comfortable we as doctors have anxious moments until the welcome crisis comes and the virulence of the attack has spent itself. The man who has the best chances of recovery from acute pneumonia is he who has a sound circulatory system, which of course includes sound heart, muscle, and reasonably elastic blood-vessels. I have, however, long been of the opinion that we are still as a profession at a disadvantage in the treatment of this virulent disease, and our ordinary methods are not sufficient for the attack. We require some weapon which will destroy the virulence of the pneumococcus and its products and produce a rapid immunity in the blood against it.

Naturally, we turn to some remedy which has been prepared from pure cultures of the pneumococcus of Fraenkel, and it must be either in the nature of a vaccine or a serum. It has been found extremely difficult to prepare a serum from the pneumococcus on account of the insusceptibility of animals to true pneumonia. A vaccine to be potent ought to be autogenous—that is, it ought to be prepared from sputum or blood of the patient himself; but this is a matter of great difficulty, as the disease being of such an acute and short duration has either subsided or terminated fatally before the vaccine can be got ready, and it might be borne in mind that to be of real value the vaccine must be injected early in the illness; in fact, if it can be used on the first or second day it acts at times almost miraculously. If we have to wait until the fourth or fifth or sixth day when there is a general pneumococcic blood-stream infection the vaccine is of little value, and seems to exert little or no influence on the course of the attack.

We are thus compelled to use a stock vaccine or a homologous vaccine prepared from a pure culture of pneumococci isolated from the blood of a patient suffering from lobar pneumonia. In this we are at a great disadvantage, because the strains of pneumococci vary considerably in their virulence and characteristics, so that we are not certain that we are using a vaccine prepared from the same infection as that with which we are dealing. In spite of this disadvantage, however, the results with a stock vaccine are most valuable, and in cases in which I have used vaccine for pneumococcal infections the encouragement has been so great that I will certainly persevere with it in every case.

The total number of cases of pneumonia in which we have used vaccine during the last two years has been 207, the great majority of them being treated in hospital. This number does not represent all the cases with which we have had to deal, as in some simple cases without any complication it was not found necessary to resort to vaccine treatment, whilst in a great many advanced cases which were obviously dying on admission to the hospital it was not considered desirable to administer it. I have, however, included in this list all the cases in which it was given, so that the results may fairly represent the value of the treatment. I must,

Table showing Results of Treatment in 207 Cases of Pneumonia.

Age.	Cured.	Died.	Total.
Between 1 and 10 years	28	2	30
,, 10 ,, 20 ,, ...	30	6	36
,, 20 ,, 30 ,, ...	31	4	35
,, 30 ,, 40 ,, ...	25	5	30
,, 40 ,, 50 ,, ...	42	8	50
,, 50 ,, 60 ,, ...	16	6	22
,, 60 ,, 70 ,, ...	1	3	4
	173	34	207

All the above cases were treated with vaccines (except two which had serum). Death-rate a little over 16 per cent.

however, say that after my experience with vaccine it has been found extremely difficult to estimate accurately the true value of the treatment, for the simple reason that we can never be certain that a case would not have recovered without its use, hence we can only be guided by our general impressions and observation of the clinical course after each injection. It is not necessary here to review the general treatment which was prescribed for each case; suffice it to say that each case was treated on orthodox lines, with the treatment of special symptoms as they arose, and where necessary alcohol was always freely given. In cases where pain was a symptom fomentations and poultices were applied and in no case was an icebag used. Temperature was always reduced with tepid sponging, whilst in cases of sleeplessness and mental irritability we found great relief with small doses of omnopon either given by the mouth or hypodermically.

Dosage.

The usual dosage recommended by some writers is from 10 to 50 million with half the amount for children. In my opinion these doses are too small, and to get the full effect of the vaccine it is necessary to give it in larger doses and at the earliest possible moment after the onset of pneumonia.

We usually commence with an initial dose of 50 million, followed in 24 hours, if necessary, by another injection of 100 million, and in some cases we have even given 150 million, with apparently excellent result. I consider the question of dosage by far the most important of all, and as the result of a large experience I am convinced that the vaccine itself is harmless, and I have never noticed anything but a good effect from its use. There can be no question that in a certain proportion of cases it appears to have no effect, and does not seem to influence the progress of the disease one way or another. On the other hand, in a great many cases an injection of a large dose is followed by a feeling of comfort and relief, associated with a rapid fall in the temperature and slight improvement of perspiration.

Effect on Crisis.

The administration of vaccine does not seem to have any appreciable effect in hastening the crisis in an ordinary case of pneumonia. The old teaching that pneumonia is a self-limited disease seems still to be true, and I cannot say that I have observed any shortening of the period of fever after the use of vaccine or serum. There is frequently a sudden drop of two or three degrees after a large injection of vaccine, constituting a sort of pseudo-crisis, but unfortunately after a few hours the temperature again rises until the true crisis appears. It seems to be necessary before a crisis occurs that a sufficient amount of anti-pneumotoxin should be formed in the blood to exactly counterbalance the amount of pneumotoxin.

The effect of vaccine on the pulse is always good, often reducing it in an hour by 30 or 40 beats, but in a few cases in which the blood pressure was taken no appreciable difference was observed.

Other Pneumococcal Infections.

Following the general rule of vaccines, we would expect to find better results in more or less subacute or chronic pneumococcal infections than in virulent pneumonia. I have only used vaccine in one such case—viz., a general pyæmic condition with numerous abscesses in many parts of the body, following an attack of lobar pneumonia. Undoubtedly we observed excellent results follow each injection and an apparently hopeless case was transformed into a complete cure.

The delirium which so frequently accompanies pneumonia of the apex is possibly explained by the direct lymphatic extension to the brain of a localised pneumococcal meningitis, and we have observed that in such cases the administration of vaccine is nearly always followed by diminution of delirium and a tendency to natural sleep, but often only of a temporary character. It would seem to me that the ideal treatment of pneumonia would be by means of an anti-pneumococcus serum, but so far we have not succeeded in obtaining one, owing to the difficulty in immunising an animal. I believe, however, that if the serum of a patient who has just had a crisis could be obtained in sufficient quantity it would act as a true antitoxin in a case of pneumonia, exactly as in the case of diphtheria.

In conclusion, I would like to mention that we have observed a notable absence of complications in those cases treated by vaccines. I do not wish to lay too much stress on this observation, but it is a fact that out of the whole 207 cases not a single empyema has resulted.

I am convinced that we have in pneumococcus vaccine a valuable aid in the treatment of pneumonia, and although not a specific remedy it ought always to be used in those cases of a virulent type which threaten the life of a patient.

I have to express my indebtedness to my colleagues, Dr. G. E. Williamson and Dr. G. W. N. Joseph, for their valuable help.

Liverpool

LITERARY INTELLIGENCE. — Messrs. Baillière, Tindall, and Cox announce for publication the following: "Acromegaly; a Personal Experience," by Leonard Mark, M.D., which will contain portraits and anthropometric data showing full course of the disease in a typical case; "The Treatment, Prevention, and Cure of Tuberculosis and Lupus with Allyl Sulphide," by W. C. Minchin, M.D.; and a new edition of Sir William Whitla's "Dictionary of Treatment."

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A FATAL CASE OF PROLONGED TOXIC COMA LASTING NINE DAYS.

BY I. C. MACLEAN, M.D. LOND.

THE patient, an unmarried woman, aged 41, who had been in the habit of taking veronal in from 7 to 10-grain cachets from a medical man's prescription for the last four years, inadvertently swallowed 90 grains one day at about 10 A.M. She was not seen by me till 3.30 P.M., when I found her in a state of profound coma; pulse 80; respiration 22 and stertorous; slight corneal reflex and knee-jerks were present. I washed out her stomach, which was found empty, and gave her 4 ounces of strong coffee with 2 ounces of brandy, also strychnine hypodermically. All reflexes had disappeared next day and she remained comatose, only recovering partial consciousness in the last 36 hours, when she made feeble attempts to swallow, recovered the use of her facial muscles, and moaned faintly in response to questions. She died with symptoms of acute broncho-pneumonia and acute hæmorrhagic nephritis on the ninth day. I bled her on two occasions, 1½ pints the first night, infusing 2 pints of saline solution intravenously, 1½ pints the second evening with 3 pints of saline solution intravenously, and I gave a third infusion of 2 pints of saline solution on the fifth day. Six-hourly feeds of 8 to 10 ounces were given with the œsophageal tube, the stomach being washed between each feed, which, consisting chiefly of a diluted mixture of milk, Valentine's meat juice, and brandy, was usually absorbed. Saline solution per rectum was occasionally given also. Great care was exercised with regard to oral cleanliness and I had the help of two excellent and attentive nurses; in spite of this, however, towards the end the upper air passages became very foul. Various stimulants were used at intervals—brandy, strychnine, pituitary extract, and digalen—while oxygen was administered freely. The temperature, which was subnormal for the first two days, gradually rose, being highest on the seventh day (105·6° F.). The average urine drawn off for the first six days was 24 ounces in the 24 hours; on the last three days only 9, 6, and 3 ounces respectively. There were no convulsions. Towards the end fatty, hæmorrhagic, and granular casts were abundant, but no hæmatoporphyrin was detected. The infusion of saline solution was always followed by marked improvement of the pulse, respiration, and general condition, and up to the fourth or fifth day I had serious hopes of saving the patient.

Knightsbridge, S.W.

NOTE OF A CASE IN WHICH ONSET OF DIABETIC COMA SIMULATED APPENDICITIS.

BY J. S. B. STOPFORD, M.B., CH.B. VICT.,
SENIOR HOUSE SURGEON, ROCHDALE INFIRMARY.

AFTER reading an annotation in THE LANCET of Feb. 10th (p. 378) on Abdominal Pain as a Premonitory Sign of Diabetic Coma I thought a few notes on the following case might be of interest.

A boy, 12 years of age, was admitted to the Rochdale Infirmary at about 11.30 A.M. on Dec. 8th, 1911, having been sent in as a case of acute appendicitis probably requiring immediate operation. He had been suddenly taken ill during the previous night with pain in the lower abdomen which was so severe that he was compelled to flex both thighs. He suffered from flatulence and vomited once a little thick brown material which gave no relief. He passed flatus freely, and about three hours after the onset the bowels were moved and the motion was normal. The pain became a little easier after this, but he continued to have short attacks of very acute pain, chiefly in the right iliac region. The mother stated that up to 18 days ago the boy had never had a day's illness in his life, but about this time he began to

suffer from nocturnal incontinence of urine and complained of passing a very large amount of water.

On admission the patient looked acutely ill and appeared very drowsy. His face was "pinched" and quite "abdominal" in character. The whole body seemed wasted and the skin was noticeably dry and thin, and could be easily raised from the subcutaneous tissues. He complained of thirst and a nasty taste in the mouth, the tongue being dry and slightly furred. The pulse-rate was 120 per minute, weak, and of low tension; the respirations were 28; and the temperature was 97·4° F. The abdomen moved freely with each respiration, and there was no distension. The whole abdomen was tender on palpation, and this was most marked in the right iliac region, but no swelling could be felt. There was no tenderness in the loin, and nothing was found on examining per rectum. Within an hour of the time of admission the patient became more drowsy and the respirations became quite "sighing" in character. The drowsiness, the respirations, and the history given by the mother suggested the possibility of diabetes, and on obtaining a specimen of the urine shortly afterwards the specific gravity was found to be 1030, and sugar and diacetic acid were present. The boy was immediately put on large doses of sodium bicarbonate, both by the mouth and rectum, but in spite of treatment he sank into typical diabetic coma next morning and died 20 hours later. During the last 24 hours he had passed 80 ounces of pale urine containing 1400 grains of sugar.

At the post-mortem examination the appendix was found to be quite normal, and there were no macroscopic changes in the abdomen except some fatty infiltration of the liver and kidneys. Unfortunately permission was not granted to examine the brain, and through a mistake no microscopic sections were cut of the pancreas, &c.

This case illustrates extremely well how abdominal pain may be a premonitory symptom of diabetic coma and how necessary it is to make a systematic examination of the urine in all cases.

I am indebted to Dr. H. Harris, honorary surgeon to the infirmary, for permission to communicate these notes.

Rochdale.

NOTE ON A CASE OF FRACTURE OF THE LARYNX.

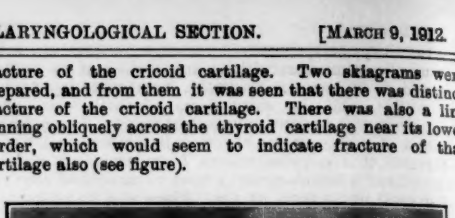
BY JAMES ANDREW, M.D. GLASG., D.P.H. CAMB.

FRACTURES of the larynx are fortunately extremely rare, and are usually the result of very severe violence caused by crushing or pressure directly over the cartilages. They are usually followed by very serious results, due, no doubt, to the extensive damage, not only to the cartilages, but also to the mucous membrane of the larynx. The following case is of interest, both on account of its exceptional causation and also because of its complete and rapid recovery.

On Oct. 9th, 1911, an engine driver, aged 43 years, called at my surgery complaining of pain in the throat and difficulty in swallowing. He gave the following history. On Oct. 6th he was following his usual occupation. While endeavouring to open the throttle of the engine he was seized by a violent attack of sneezing. He turned his head to one side, away from the fire-box, and immediately afterwards felt something "crack in his throat," and he could not sneeze owing to "cramp in the muscles of the throat." During the remainder of the day his throat was very painful, and he had difficulty in swallowing, but he was able to finish his day's work. On the 8th the pain was very severe, and he had great difficulty in swallowing. He complained also of salivation.

When seen by me on Oct. 9th there was no evidence of external injury. The neck appeared slightly swollen. The voice was husky, and swallowing was difficult and painful. Salivation was profuse. On lightly grasping the larynx between the finger and thumb and gently moving it from side to side, distinct crepitus was felt in the region of the thyroid cartilage, and I was of opinion that it was located in the right thyroid cartilage, though it was extremely difficult to define its origin exactly.

Dr. J. Walker Downie kindly examined the patient at the Western Infirmary, Glasgow, on Oct. 13th, and reported that there was crepitation on both sides of the pomum, chiefly at the lower border of the thyroid and upper border of the cricoid cartilages. He was of opinion that there was fracture of the cricoid cartilage. Two skiagrams were prepared, and from them it was seen that there was distinct fracture of the cricoid cartilage. There was also a line running obliquely across the thyroid cartilage near its lower border, which would seem to indicate fracture of that cartilage also (see figure).



Reproduction of skiagram of thyroid region. *a–a* indicates line of fracture.

The treatment consisted in wearing for 21 days a poroplastic splint moulded to the neck. During that time the pain in the throat completely disappeared, and the difficulty in swallowing and salivation gradually passed away.

The case is of interest chiefly on account of its causation. The muscles of the arms and chest were fixed in the man's endeavour to open the throttle of the engine, and in turning the head to one side he also fixed the muscles of the neck. The attack of sneezing brought the larynx into sudden contact with his collar, so that he fractured his larynx over the comparatively sharp edge of the collar.

I am indebted to Dr. Walker Downie and to Dr. W. F. Somerville, of the Western Infirmary, Glasgow, for report and skiagram of the case.

Coatbridge.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

LARYNGOLOGICAL SECTION.

Exhibition of Cases and Specimens.

A MEETING of this section was held on March 1st, Dr. STCLAIR THOMSON, the President, being in the chair.

The PRESIDENT exhibited: 1. A Larynx showing Epithelioma removed post mortem from a man aged 23. The case had been shown before the section a year ago, and attention was drawn to the early age at which the disease had appeared. 2. A case of Combined Tuberculosis and Syphilis of the Larynx in a woman. The patient had no physical signs in the chest, but the Wassermann test was positive, and tubercle bacilli had been found in her sputum. The larynx showed deposits of tubercle and syphilis each in typical form. 3. Double Abductor Paralysis in a man, aged 42, in whom a skiagram indicated a mediastinal tumour.

Dr. H. J. DAVIS showed a case of Double Abductor Paralysis in which he proposed to perform thyrotomy with the object of removing completely the left arytenoid and vocal cord. (A conflict of opinion arose in the discussion on the question of the advantages which such an operation would have over tracheotomy, the majority of the speakers expressing themselves as favouring the latter.) Dr. Davis also exhibited the following series of cases and specimens: 1. A Grain of Indian Corn which had been retained in the nose for

14 years. It had been expelled from the left nostril of a girl aged 19 2. A Foreign Body, a pearl collar-stud, impacted in the Glottis of a Child, aged 3. The larynx and trachea, with the stud resting *in situ*, its lower disc caught in the chinks of the ventricles, were exhibited. 3. Injury to the Larynx by Cut-throat in a man aged 41. The vocal cords had been destroyed, but a growth of granulation and cicatricial tissue had taken their place, and the patient was able to speak with a fair amount of phonation. 4. An unusual case of Functional Aphonia in a child aged 6. The loss of voice had followed tracheotomy at the age of two years. Faradisation and tonics had brought about a cure. 5. A Double Acute Frontal Sinusitis following influenza in a boy aged 15. Dr. Davis had operated twice, laying open and draining a large abscess in the forehead, which led into the right frontal sinus by a fistula in the anterior wall; subsequently both sinuses were freely opened and drained into the nose. Discussing the case several members drew attention to the fact that in acute frontal sinusitis with fistula formation it is usually the anterior and not the inferior wall that gives way. 6. A Temperature Chart of a Case of Acute Sphenoidal and Maxillary Sinusitis before and after operation. Attention was drawn to the necessity for routine examination of the nasal accessory sinuses in cases of unexplained pyrexia. (The PRESIDENT also related a case similar to this in which a persistent pyrexia was cured by draining the sinuses.) 7. A girl, aged 16, with Lupus of Hard and Soft Palate, Epiglottis, Larynx, and both Nasal Cavities, and Lupus Erythematosus on both Cheeks.

Mr. HERBERT TILLEY showed a male, aged 59, who had been tracheotomised 16 years ago for Fixation of Cords in the middle line caused by (?) perichondritis of each crico-arytenoid joint.

Dr. W. JOBSON HORNE exhibited a case of Extensive and Rapid Destruction of the Soft Palate by Specific Disease.

Dr. W. H. KELSON showed a woman from whose trachea a Neoplasm, probably a Papilloma, had been removed.

Dr. ANDREW WYLIE showed a boy, aged 7, with a Cystic Condition of the Left Arytenoid, possibly tuberculosis.

Mr. G. WILKINSON reported a case of Severe Epistaxis Associated with Multiple Hereditary Telangiectases in a man, aged 62, in which the hæmorrhage proceeding from the septum had been controlled by cauterisation.

Mr. WILKINSON also showed: 1. (?) Papilloma Removed from the Posterior End of the Right Inferior Turbinal. (The pathological nature of the growth aroused some discussion.) 2. A Molar Tooth which he had removed by upper bronchoscophy from the right bronchus; the foreign body had found its way into the trachea during extraction by a dentist.

Dr. W. IRONSIDE BRUCE gave a lantern demonstration of X Ray Photographs illustrating diseases of the accessory sinuses.

Mr. W. G. HOWARTH showed: 1. A case in which an Intrinsic Carcinoma of the Larynx had been removed under infusion anæsthesia with hedonal, to bring to notice the great advantages that this method of anæsthesia affords in laryngeal operations. 2. A case of Tuberculous Ulceration of the Pharynx and Larynx. 3. A man with a peculiar Bulbous Swelling on the end of the nose, ascribed by some members to a cyst, by others to a lipoma.

Mr. ARTHUR EVANS showed a patient with Paralysis of the Right Vocal Cord following an operation on the isthmus of the thyroid gland. Mr. Evans suggested the possibility of treating the case by suture of the ends of the recurrent laryngeal nerve, or, failing that, by nerve anastomosis with the hypoglossal branches.

Dr. J. DUNDAS GRANT showed microscopical sections from a case of Tuberculous Ulcer of the Larynx, the first section suggestive of epithelioma, the second of non-bacillary tuberculosis, ? lupus.

Dr. WYLIE exhibited a case of Ulceration at the Base of the Tongue in a syphilitic subject.

Mr. F. F. MUECKE showed (1) a large Gumma of the Thyroid Cartilage causing considerable swelling in the neck; (2) a case of Laryngeal Swelling and Ulceration of Specific or Tuberculous Nature; and (3) a patient with Cystic Swellings Projecting from the Sides of both Anterior Nares, probably dental cysts.

Mr. G. W. BADGEROW presented an instance of what looked like Vincent's Angina of the Tonsil in a boy aged 5 years.

Mr. C. W. M. HOPE showed a case of Herpetic Vesicles affecting the mucous membrane of the soft palate.

LIVERPOOL MEDICAL INSTITUTION.

Treatment of Wry-neck.—Stones in the Bladder.—Experiences with Salvarsan.

A MEETING of this society was held on Feb. 22nd, Mr. ROBERT JONES, the President, being in the chair.

The PRESIDENT referred to the loss that had been sustained by the death of Lord Lister. A vote of condolence with the relatives of the deceased peer was passed by the members standing.

Mr. W. THELWALL THOMAS read a note, illustrated by a case and by lantern slides, on the Treatment of Wry-neck, based on six cases recently treated. Mr. Thomas claimed for his method that, while he got good results, it did away with the long and tiresome after-treatment, as he did not use any retentive apparatus. The operation was on the same principle as that for lengthening tendons. An incision was made transversely over the lower third of the sterno-mastoid muscle, the skin and platysma were retracted, the anterior margin of the sterno-mastoid was freed and cut half through, then the muscle was divided vertically enough to give the length equal to the difference between the two sides, the posterior part of the muscle was then undermined by a director to guard the deep structures and cut. It was often found necessary to divide also bands of deep fascia and in one case other muscle fibres. The ends of the muscle were sutured with 30-day chromic gut without strain and then the superficial wound was closed. The line of the incision did not correspond with the deep wound.—In the discussion that followed Mr. R. W. MURRAY said that he thought the condition was not due to traumatism, but to some defect in ante-natal position, and on this point there was considerable difference of opinion expressed by those who spoke.—The PRESIDENT said that the swellings had been incised soon after birth and found to be œdematous; also the rule was that in rupture of muscle elongation followed. Lorenz was still using the subcutaneous incision with over-correction of the deformity, which could not be done with the sutured wound. He thought the success of these cases depended on careful after-treatment.—Mr. R. C. DUN, Dr. G. C. E. SIMPSON, Mr. D. DOUGLAS CRAWFORD, Mr. F. T. PAUL, and Dr. A. STOOKES took part in the discussion.

Dr. C. THURSTAN HOLLAND read a note on Stones in the Bladder, which he illustrated by many lantern slides of radiographs of cases, in several of which an examination by the sound had given negative results, although a stone or stones were found by the X rays. In a large number of cases examined he had never found a stone of pure uric acid in the kidney or ureters, but in the bladder these had been invisible to the X rays. With these rare exceptions he had found the radiographic method much the most trustworthy diagnostic means they possessed. Dr. Holland considered the sound ineffective and dangerous; he thought the cystoscope, also, had much the same objections, but might be useful as confirming the X ray findings. There were a few cases of uric acid stone that did not give enough shadow to be made evident by a radiograph.

Dr. G. S. STOPFORD-TAYLOR and Dr. R. W. MACKENNA read a paper on their Experiences with Salvarsan. They had treated 92 cases. At first they had used the intramuscular injection, but in the later 74 cases had found the intravenous method preferable. No bad results had been seen, but it was important that the patient should be properly prepared. A purgative was given the night before the injection, and next morning a light breakfast, the salvarsan being injected five hours after. It was important to make the solution fresh for each injection, to use saline solution freshly made of water distilled in glass vessels. With these precautions there had been no reaction in most cases, in a few slight sickness or loose motions from the bowels. Elimination took place by the urine in four or five days after a dose of 0·3 grm. and in seven to nine days after a dose of 0·6 grm. The effect on the lesions was immediate. Photographs and lantern slides were shown illustrating the effect on a case of skin eruption. No lesions yielded more rapidly than mucous patches and condylomata; headache at once disappeared; adenitis was the most persistent lesion. In tertiary cases where KI and mercury had failed salvarsan was most valuable. Lesions of the mouth and throat healed rapidly. Iritis was much improved. There was improvement in cases

of general paralysis and in the subjective symptoms of locomotor ataxia, but this improvement had not been maintained. Destroyed neurons could not be restored. One dose could convert a positive Wassermann reaction to a negative in one month, and this might continue for nine months without further treatment. In some cases a single dose will not change the reaction until combined with mercury. The general effect was always an improvement in general health and well-being. As to dangers, death might be caused by this as by any other potent drug. French reports of bad results were biased. No deleterious effect had been seen on the optic nerve. Three cases had relapsed, so that it was always well to reinforce the treatment by mercury, and in all cases a combination of drugs was best. The general conclusions were that salvarsan was effective at every stage of the disease, after mercury and iodide of potassium had failed; that one injection may not cure, the dose should always be repeated and combined; that intravenous injection was better than intramuscular; and lastly, the treatment should be controlled by the Wassermann reaction.—In the discussion that followed Dr. A. J. EVANS agreed with the authors of the paper; he emphasised the need for care in the preparation of the solution. He used a special needle without exposure of the vein for the injection. In cases of congenital diseases there had been no effect on the child from injections given to the mother.—Dr. F. P. WILSON said he had used an emulsion in iodipin for injection intramuscularly. He had found some tertiary cases do better with mercury and potassium iodide than on salvarsan.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 20th, Dr. S. Lodge being in the chair.—Mr. Basil Hughes read a paper on Recent Advances in the Diagnosis and Treatment of Syphilis. He said that the first essential was an early diagnosis. The Hunterian chancre might be difficult to find, atypical, or modified by the presence of soft sore or other mixed infection. Microscopical examination by means of the Indian-ink method for the demonstration of the spirochæta was of great assistance. The presence of indurated glands in the groins was also of great value. Wassermann's reaction he regarded as all-important in the diagnosis of syphilis. He made use of Dr. W. d'Este Emery's method, which had been found to give an accurate result in 98 per cent. of cases. He then described the method of performing the reaction and its explanation by Ehrlich's side-chain theory. Many observers had found a negati.e reaction in very early cases of syphilis; if that were true it had an important bearing on treatment. The chancre could be excised before the infection became general. The value of Wassermann's reaction was emphasised in cases where the diagnosis would otherwise be doubtful, such as certain ulcers of the tongue, gummata of certain muscles, gummatous adenitis in the groins or axillæ, tertiary laryngitis, gumma of the tonsil, chronic superficial glossitis, and leukoplakia of the tongue, conditions which should always be regarded as syphilitic unless the reaction was negative. Tabetics invariably gave a positive Wassermann reaction; in general paralysis of the insane the cerebro-spinal fluid was also positive, a condition which did not obtain either in tabes or gummatous disease of the central nervous system. Prophylaxis did not receive the attention it deserved. The State should undertake more responsibility in the matter. A strong plea was entered for the more complete treatment of venereal disease in charity-supported institutions, Government subsidies being urged should the funds for that purpose fail. Speaking of mercurial treatment, Mr. Hughes advocated getting the patients under its influence as rapidly as possible. He favoured inunction or intramuscular injections. When physiological limits were reached in the former case gray powder by the mouth might be substituted. Intramuscular injections were more rapid, and for this purpose he advocated Lambkin's cream in weekly doses, numbering about 25, with certain intervals. As with gray powder and inunctions, decoct. sarsæ co. helped the tolerance for the drug. Throughout any course of treatment control by the Wassermann reaction was necessary. It became negative under mercury, but so long as syphilis was still present the positive reaction returned about six weeks after its administration had been stopped. Treatment should be continued until the reaction remained negative for 12 months after treatment had been abandoned. Mr. Hughes believed that this policy would avert many of the late parasyphilitic manifestations, and that cessation of symptoms was no guide as to the cure of the disease. After mentioning the various arsenical preparations which had been tried and abandoned owing to the serious dangers in their employment, he discussed his results by treatment with salvarsan in 100 cases during the last two years. It might be given subcutaneously, intramuscularly, or intravenously. The second method was valuable in certain cases, because its action was spread over a period of some three weeks. But the occasional formation of necrosis and of intractable though aseptic "abscesses" limited its use. He relied mainly on the intravenous method. He described the method of preparation and administration of the drug. He believed firmly that its dangers were entirely due to neglect in the avoidance of cases in whom gross lesions of the fundus oculi, of the heart, of the chest, or of a septic character were present, or to neglect in the careful administration of the drug, which should be injected in a state of perfect solution and of proper alkalinity. The solution must not be split in the wound, and a second dose should not be given soon after the first. With these precautions most of the after-results could be avoided. The most important of these were a metallic taste in the mouth, headache, vomiting, diarrhœa, rise of temperature, albuminuria, skin rashes, and rigors. Thrombosis and other embolic dangers could be avoided by care in the preparation and administration of the drug, and anaphylactic phenomena (many of the deaths recorded had been due to a second dose given too soon after the first) by allowing sufficient time to elapse between the doses. In cases showing no active lesion there seemed to be some relation between backache as an after-effect of injection and lesions of the central nervous system. Mr. Hughes gave it as his opinion that a single dose was rarely sufficient, and advised three, the indications for their use, as in treatment by all other forms of methods, being repeated Wassermann reactions. He discussed the simultaneous use of mercury, emphasised the dangers of treatment by "606" in inexperienced hands, and finally insisted on the importance of providing, either by the State or the municipalities, facilities for the performance of the Wassermann reaction in the same manner as it had been made possible nowadays to obtain bacteriological information in cases of diphtheria, typhoid fever, and phthisis.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 21st, Dr. F. H. Jacob, the President, being in the chair.—In opening the discussion as to whether the "Removal of Glands in Malignant Disease was Worth While," Dr. A. Stanley Green said that extensive operations, involving the removal of large tracts of glands and fascia sheaths together with the original growth, were now the order of the day. Surgeons lost sight of their cases, but as a practitioner he was forced to the conclusion that a case was hopeless as regards permanent cure when glands were present. The presence of a microscope in the operating theatre was not an infallible test as to whether the growth was malignant or not, as instanced in a case where, although the testis was reported to be non-malignant, the patient died within three months. Dr. Green then considered operations for malignant disease under four heads: (1) where the glands were not palpably affected—these, of course, gave the best results; (2) where, as in the breast, the growth and glands were removed in one mass; here the results were encouraging; (3) where the glands were removed at a second operation; this was generally a futile procedure, because some of the lymphatic tracts were almost certain to be left between the two operations; and (4) where a further operation was performed for the removal of recurrent glands. Cases were quoted where this was absolutely disastrous. Still, unfortunately at present operation was their only known chance of a cure, for X ray treatment and radio-therapy were at the best only palliative.—The President agreed that X ray and radium only retarded the growth, but warned that they must not be allowed to cause dermatitis.—Mr. W. M. Willis thought that the whole operation for cancer of the breast should be reviewed, and that more consideration should be given to the duration of the disease and the size of the glands. Operation sometimes seemed to light up the cancer. In the oral region the enlargement of glands was often due to sepsis. Each region must be considered separately, and even where the glands were not felt to be enlarged, yet it was advisable

to remove them.—Dr. Sarah Gray said that removal of glands was less favourable in rapidly growing cancer than in more slowly growing cases.—Mr. C. H. Allen remarked that formally mere excision of the growth in epithelioma of the lip was considered sufficient; he, however, thought that better results were obtained by thoroughly removing the glands at the same time.—Dr. W. T. Rowe thought that better results were obtained in tongue cases when the glands were removed as well as the growth; moreover, if recurrence did take place in these cases, it generally occurred in the internal organs and not in the glands.—Mr. A. M. Webber agreed with the last speaker, and said that it was an important thing if the patient could be spared a hideous death from sloughing glands.—Dr. C. H. Cattle said that epitheliomata were of a less malignant type of cancer than carcinomata, also that the glands were less affected in slow growing cancers such as scirrhus of the breast.—In his reply Dr. Green said that in his experience patients suffered more when dying from internal secondary deposits than did those whose glands were not removed.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on March 1st, Dr. Leslie Durno, the President, being in the chair.—Dr. J. Hugh Thursfield gave a lantern demonstration to illustrate some points in the Diagnosis of Children's Diseases. In cases of meningococcic meningitis the extreme head retraction and wasting were well shown, also the wide-open staring eyes. If treated with serum from 40 to 50 per cent. of the cases recover. Flexner's serum is injected into the spinal theca; Göppert's serum is injected under the skin. A peculiar form of rheumatoid arthritis (called Still's disease) is probably an infective disorder. There are spindle-shaped swellings of the small joints of the hands, wrists, knees, and ankles, enlarged glands in the axilla and neck, hectic fever, and enlarged spleen. Cases may last four, five, or six years, and die from an intercurrent disease. Post-mortem examination shows that the actual joints are not diseased, but there is thickening of the soft parts and periarticular structures. The condition is probably due to a bacterial poison formed in the intestine. Cretins are seldom diagnosed before one year old, and it is not true that good results are obtained if treatment is begun very early. A case of tetany in an infant shows œdema of the backs of the hands, with the fingers clenched and wrists flexed. It is seen in rickety and ill-fed children. Localised œdema below the eye, not due to nephritis, is due to whooping-cough, and often precedes it. Birth or Erb's palsy is due to paralysis of the fifth and sixth cervical nerves, and the muscles affected are the external rotators of the shoulder, biceps, coraco-brachialis, and supinator longus. Operative treatment by nerve anastomosis has not been successful, better results being obtained by massage and passive movement. Babinski's sign or the external plantar reflex, where the great toe turns up and the small toes turn in, is, at any age, good evidence of degeneration of the lateral and pyramidal tracts of the cord. In pseudo-leukæmia infantum the spleen and liver are enlarged, and there is chronic anæmia, causing great pallor, and hæmorrhages occur into the spleen, kidneys, skin, &c. It is probably due to an intestinal auto-intoxication. Hirschsprung's disease is a congenital dilatation of the colon, which goes on to perforation and fatal peritonitis. Treatment with enemata and eserine increases the motor power of the colon. Other curiosities shown were: Complete Congenital Absence of the Pectoral Muscles of the Left Side; Heart on the Right Side of the Chest; Extreme Chronic Arsenical Pigmentation; Auto-inoculation of Vaccinia in the Eye; and Congenital Ichthyosis.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 16th in the Glasgow Eye Infirmary, Dr. A. Freeland Fergus, the President, being in the chair, when a clinical and pathological demonstration was given by members of the infirmary staff.—Dr. Andrew Wilson read a short note on three cases of Scotoma Scintillans occurring as a symptom of migraine, and showed diagrams illustrating the fields of vision, and coloured drawings representing the appearances seen by a patient during the attack. Dr. Wilson also showed a specimen of an unusually large Lacrymal Sac excised on account of Dacryocystitis.—Dr. A. J. Ballantyne showed two cases operated on for Ptosis, with satisfactory results, and a case of Concomitant Strabismus, which had followed a fracture of the vault of the skull in the frontal region. In the latter case the strabismus was not due to injury to any ocular nerve or muscle, but had been latent at the time of the accident, and had developed in consequence of the occlusion of the eye by dressing during the healing of the fracture.—Dr. A. Lewis McMillan read notes of a case, the patient being a boy aged 8 years, in which Orbital Cellulitis, occurring as a sequela to scarlet fever, had necessitated enucleation of the affected eye.—Dr. Brownlow Riddell showed a patient with a rare condition of the fundi—Choroideremia, or Gyrate Atrophy of the Choroid and Retina; and three patients illustrating the Pupillary Phenomena in Glaucoma, Iritis, and Tabes Dorsalis.—Dr. M. Logan Taylor made a communication on Malignant Intra-ocular Tumours, based on cases treated in the Glasgow Eye Infirmary during the past three years, and dealing specially with the so-called glioma or neuro-epithelioma. After discussing the lymphatic connexions of the eye and the paths along which the spread of tumour might occur, he particularly emphasised the fact that, in view of our increased knowledge of the pathology of these growths, a more extensive operation for their removal should be carried out as early as possible in all cases. The procedure he recommended was complete exenteration of the orbit with division of the optic nerve at the optic foramen. Dr. Taylor also showed a number of gelatine-mounted preparations of eyes illustrative of a variety of diseases and injuries.—Dr. H. L. G. Leask showed two cases of Penetrating Injury, in which the foreign body was still in the eyeball, or orbit, after many years, as illustrated by radiograms; and a case of Disease of the Ethmoid Cells after successful operation. He also read notes of a case of Intra-ocular Tumour secondary to a scirrhus of the breast.—Dr. W. B. I. Pollock gave a demonstration of specimens of Glioma Retinæ.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A pathological meeting of this society was held on Feb. 16th, Mr. H. Littlewood, the President, being in the chair.—Dr. R. Cattley and Professor A. S. Grünbaum made some remarks on the Genesis of Chronic Arteritis. They said that in syphilitic arteritis the earliest manifestation was an irregular hypertrophy of the internal elastic lamina which was quickly followed by a hypertrophy of the muscular coat. A proliferative thickening of the endothelial and sub-endothelial tissues occurred antecedent to marked degeneration of the muscular and elastic elements.—Dr. Helen G. Grünbaum and Professor Grünbaum communicated notes on Further Experiments on the Treatment of Inoculated Rat Sarcoma and Observations on Certain Accompanying Blood Changes. This paper is published at p. 644.—The President showed Gall-stones removed from a case of suppurative cholecystitis in the third week of typhoid fever. The typhoid bacillus was germinated in the pus.—Dr. C. Oldfield exhibited a specimen showing Hæmorrhage into the Ovary which produced signs and symptoms like ectopic gestation.—Dr. A. L. Whitehead and Dr. M. J. Stewart exhibited a Malignant Tumour of the Lacrymal Gland showing the presence of both squamous and columnar-cell carcinoma.—Mr. H. Collinson and Dr. Stewart exhibited a Scirrhus of the Breast showing fibrosis of the perivascular lymphatics in the surrounding fat. The patient had lymphatic œdema of the arm.—Dr. Stewart showed the organs from a case of Partial Transposition of Viscera. The stomach and spleen only were transposed, while the left lobe of the liver showed marked hypertrophy.—Dr. W. H. Maxwell Telling, Mr. J. F. Dobson, and Dr. Stewart showed preparations from a case of Epithelioma of the Cheek in which the epithelioma was regarded as the result of X ray treatment.—Specimens were also shown by Dr. T. Wardrop Griffith, Mr. B. G. A. Moynihan, Dr. Leonard A. Rowden, Dr. J. B. Hellier, Dr. Clara Eglington, and Mr. W. Thompson.

HARVEIAN SOCIETY.—A meeting of this society was held on Feb. 29th, Dr. H. J. Macevoy, the President, being in the chair.—After the formal business of the meeting had been disposed of, Dr. Farquhar Buzzard opened the discussion on Acute Poliomyelitis and Allied Conditions.—Dr. F. E. Batten dealt with: (1) the experimental production of acute poliomyelitis; and (2) the epidemiology of the disease. The experimental production of acute poliomyelitis in monkeys had been carried out by numerous observers in Austria, Germany, France, and America.[1]

[1] THE LANCET, Feb. 17th, 1912, p. 413.

The virus was filtrable, would withstand the action of glycerine, and if an organism was ultra-microscopic the virus, therefore, had a great similarity to that of rabies. So far only monkeys developed typical poliomyelitis, but the work of Marks had shown that the disease could be transmitted through rabbits without causing clinical manifestations of poliomyelitis in them. The epidemiology was next dealt with, and it was shown that although epidemics had been known in Europe since 1881, yet during the last decade it had been widely spread over the whole civilised world. During 1910 and 1911 numerous epidemics had occurred in England, but how widely the disease was spread would only be known when there was a more general recognition of the symptoms to which the disease give rise and notification was compulsory throughout the country.—Dr. L. G Guthrie, in his remarks, dealt more particularly with the prophylaxis and prognosis in the febrile and afebrile cases. He deprecated the practice of testing the electrical reactions during the acute stage, more especially in young children. He pointed out the importance of massage and passive movement by the mother in those cases where the services of a skilled masseuse could not be obtained. He objected to the use of orthopædic instruments on the ground that usually they were much too heavy for the children to carry.—Dr. Buzzard briefly replied.

Reviews and Notices of Books.

A Text-book of Pathology, with a Final Section on Post-mortem Examinations and the Methods of Preserving and Examining Diseased Tissues. By FRANCIS DELAFIELD, M.D., LL.D., and T. MITCHELL PRUDDEN, M.D., LL.D., Columbia University, New York. Ninth edition. With 13 full page plates and 687 Illustrations in the Text, in black and colours. London: Baillière, Tindall, and Cox. 1912. Pp. 1114. Price 25*s.* net.

ALTHOUGH the name of Dr. Delafield—the senior author—appears on the title page, he no longer shares in the preparation of the work, so that Dr. Prudden is alone responsible for such alterations and additions as have been made in this, as in the last three revisions.

The book covers a wide field, though certain phases of clinical diagnosis and practical bacteriology have been excluded. Some old illustrations have been discarded and 40 new ones added. The author mentions a capital fact when he states that "the successful pursuit of pathology depends largely upon the clearness and accuracy of the student's knowledge of normal anatomy and normal physiology." So far as we can judge from the "introduction," the responsible author seems less at home on the chemical side of his subject than on the purely morphological side. "Proteins and their performances" introduce the reader to "the storm centre of research," concerning which it is stated that we must be patient, and not too eager to carry the formulæ and the working hypotheses of the chemists, without due reserve, over into the domain of living things, whose story and performances, and limitations, we are only just beginning to spell out. To the author "the structure and performances of cells," as the field richest in the promise of significant revelations, is obviously a congenial theme.

Part I. deals with general pathology, Part II. with special pathology, while Part III. is devoted to the methods of making post-mortem examinations and of preserving and examining animal tissues. The illustrations throughout, both coloured and uncoloured, are an outstanding feature of the book. The author's style of expression here and there is sometimes not what we are accustomed to in English text-books. We miss what seems to us rather important, the magnifying power under which the preparations have been observed and figured. The subjects of "regressive" and "progressive" tissue changes are concisely and sufficiently described. Under the technique for neutral fats we failed to find any reference to the newer results obtained with Nile blue. The description of bone grafts is somewhat cryptic. A whole page is given to illustrations of Thoma's frog plates for the study of inflammation. Animal and vegetable parasites occupy about 80 pages. The account of immunity is good, but under anaphylaxis even in the bibliography we find no direct reference to the work of C. Richet, who coined this word. Over 120 pages are given to infectious diseases. The technique for studying such appearances as Negri bodies and the Wassermann and other well-known tests is fully given. The chapter on Malformations, though short, is particularly well illustrated, as is also that on Tumours. Poisons, general diseases, and certain forms of death bring Part I. to a close. One page, however, seems rather too little for pyrexia.

The study of special pathology begins with the blood and blood-forming glands, and the subject is treated much as in other text-books. Considering the recent work on the pituitary body, the space given to it seems rather short. Although it is stated that an extract influences blood pressure and urinary secretion, it is not stated whether it increases or decreases these functions. We miss a reference to the work of Schäfer. The illustrations of diseases of the heart are excellent, and the same may be said of those of the lungs. The names of Mackenzie and Wenckebach are conspicuous by their absence.

This is a text-book much to be commended for the comprehensive survey it gives of pathology, and for the excellent way in which the material changes, as exemplified in morbid anatomy, are depicted in the illustrations and set forth in the text.

The Parasitic Amœbæ of Man. By CHARLES F. CRAIG, M.D., Captain, Medical Corps, United States Army. With 30 illustrations. London and Philadelphia: J. B. Lippincott Company. 1911. Pp. 253. Price 10*s.* 6*d.* net.

THIS monograph, which is published with the authority of the Surgeon-General of the United States Army, gives a detailed description of the various species of amœbæ which have been regarded as parasitic in man, attention being especially directed to their morphology, life-cycle, methods of differentiation, and relation to disease.

The book contains the results of the author's personal observation, extending over a period of more than 12 years, of hundreds of cases of amœbic dysentery clinically and in the post-mortem room. Much of his material was gathered during his service in the military hospitals and while he acted as a member of the Army Board for the Study of Tropical Diseases in the Philippine Islands. He was moved to prepare the present volume by finding that most of the works dealing with the subject were written in German, French, and Italian, and that there was no publication in the English language treating fully upon the parasitic amœbæ of man. A further incentive to prepare the work was the fact that amœbic dysentery is now recognised to be of much more frequent occurrence, even in the temperate regions of the United States, than was formerly believed.

The book is divided into nine chapters, and about half of the space is devoted to the consideration of the amœbæ of the intestinal tract, and especially of Entamœba coli, Entamœba histolytica, and Entamœba tetragena. A short description is given of the amœbæ of the mouth, of the genito-urinary tract, and of those found in exudations or abscesses and in the lungs. The author admits that the position of some of the species described cannot be regarded as permanent, it being probable that further research may result in their elimination from the list. Details are given of a number of experiments on animals carried out by himself, presumably in the Bacteriological

Laboratory of the Army Medical School, Washington, and in the Rockefeller Institute for Medical Research in New York.

This useful monograph is likely to fulfil the expectations of the author, who intended it originally for the use of medical officers of the United States Army, Navy, and Marine Hospital Service, and of public health officials and practitioners in districts affected by amœbic dysentery. It gives a very clear and concise account of the state of our present knowledge of these parasitic amœbæ of man, and their distribution, morphology, mode of reproduction and life-cycle, cultivation, and relation to disease. A valuable bibliography, consisting of a list of more than 120 references, is appended, and a useful index is also supplied.

Diseases of the Ear, Nose, and Throat. By WENDELL CHRISTOPHER PHILLIPS, M.D., Professor of Otology, New York Post-Graduate Medical School. With 545 illustrations, some in colours. Philadelphia: F. A. Davis Company; London: Stanley Philips. 1911. Pp. 847. Price 25*s.* net.

Dr. Phillips has set himself an ambitious task in writing a book which is to meet the needs of the general practitioner and the surgeon as well as the otologist and the laryngologist. He says that he has purposely refrained from perpetuating distorted theories or descriptions of operations which are obsolete or have been succeeded by more modern methods, and that his aim has been to write a practical, accurate, and concise treatise supported throughout by personal experience. The number of pages is not excessive for the threefold subject, and unnecessary space has been taken up in describing "the office equipment," as it is called, and in showing a nice little photograph of his own "treatment room." We should have preferred a rather larger amount of space to be devoted to the examination of patients, especially to the physical part of the examination.

The first part of the book, occupying nearly 400 pages, deals with diseases of the ear, and in considering the tests for hearing we find that the author thinks that if only two tuning forks are employed they should be the C2 and C4. The usual tests are briefly considered, but, as in a good many modern text-books, a very full description is given of the various tests employed in attempting to clear up difficulties in labyrinthine diagnosis.

The second part of the book is on the influence of general diseases upon the ear, nose, and throat, to which, practically speaking, another 100 pages are devoted, such diseases as tuberculosis and lupus receiving, of course, a very full description. Dr. Phillips does not describe in this place the direct method of operating on the larynx, and certainly some subjects coming under the section now under consideration are treated very cursorily. For instance, asthma receives only 26 lines, whereas the next two pages are devoted to the testing of blood pressure, with diagrams of instruments for ascertaining the pressure.

The next portion of the book, describing diseases of the nose, occupies approximately 150 pages. The operation of sub-mucous resection is very fully and carefully set out, with full sheet illustrations of all the various instruments required, though many others are given besides in the text. Ash's operation is also included. Diseases of the pharynx, naso-pharynx, and oro-pharynx between them occupy about 80 pages, while the larynx has to be content with 60, part of which is taken up by several large anatomical drawings. In fact, it is in this part of the book that condensation has been most rigorously carried out. The last part of the book is devoted to laryngoscopy, tracheoscopy, and bronchoscopy.

We have no doubt that in future editions Dr. Phillips will revise the methods of treatment, and see that the direct method is introduced to his readers at the commencement and not at the end of their studies. The present arrangement is scarcely in keeping with his stated intention of eliminating the obsolete and introducing the most modern methods, for most certainly the indirect method of laryngeal surgery is to no inconsiderable extent a thing of the past. It is much less nervous work operating by direct than by the indirect method. The results are more certain, and the technique when once mastered is relatively quite simple.

Dr. Phillips has produced a book which will no doubt fulfil the requirements of a large number of medical men and students, though we hardly think it thorough enough for specialists.

Die Experimentelle Pharmakologie als Grundlage der Arzneibehandlung. By Dr. HANS H. MEYER and Dr. R. GOTTLIEB. Second edition. Berlin and Vienna: Urban und Schwarzenberg. 1911. Pp. 554. Price, paper, 12 marks; cloth, 14 marks.

THE fact that this is the second edition of a book which made its first appearance in 1910 is evidence that the work is of sterling value, and that it has found the ready welcome which was to be expected from the reputation of its authors as pharmacologists. The application of pharmacology to the problems of medicine is prominent throughout, and with this idea in view the subject matter has been arranged, not, as is usually the case in such text-books, in chapters, each dealing with a group of similar drugs, but in sections corresponding to organs and systems of organs. Thus we have chapters on the pharmacology of the motor nerve-endings, the central nervous system, the eye, digestion, and so on. In addition to a very full description of the actions of drugs on the various organs, a useful account of the chemistry of the more important substances is given, and a most helpful discussion on the relation between constitution and physiological action is included.

Among the more prominent new features of this edition are the copious additions which have been made to the chapter dealing with the pharmacology of the generative organs. The treatment of this subject is lucid and complete. The chemical influence which an organ (e.g., an ovary) exerts, through the agency of the substances that it secretes, upon the general development and functions, upon another organ of the same system, and upon more or less distant organs, is fully discussed. We are reminded, however, that but little is known of these internal secretions, which evidently afford a wide field for bio-chemical research. The pharmacological relations of the lacteal glands and the uterus and its movements receive ample attention, as do the physiological actions of a large variety of agents. Especially noteworthy is the description of ergot, its action, constituents, and mode of employment, an account of the important recent work of Barger and Dale and their co-workers being included. These investigators appear, to a large extent at any rate, to have solved a problem which has been for many years the object of attack from all sides; they have isolated the complex active alkaloid ergotoxine and the very active bases *p*-hydroxyphenylethylamine and 4-β-aminoethylglyoxaline, the two latter having been previously separated from the decomposition products of flesh. A third active substance of the putrefaction-base class, agmatine, which, however, is not mentioned in the book under review, has been obtained from the drug by Engeland and Kutscher.

One of the most useful chapters in the last edition was that dealing with the relations of pharmacology to the causes of disease, and much new material has now been added to this section, which treats the subject in an exhaustive manner. An interesting feature of the matter found under the heading "General Antiseptics" is a discussion of the differing

germicidal powers of various disinfectants, depending upon their ability to penetrate the protoplasmic lining of the bacterial cell. This penetrating power is due in some cases (e.g., phenol) to the solubility of the antiseptic in this protoplasm, and in others to the destruction of the lining layer by the poison. The effects of a third group of agents are the result of both actions. The acids, salts, and bases having disinfectant action fall chiefly into the second group, and it is shown that their activity depends on their degree of ionisation in solution; thus mercuric chloride is more ionised than the corresponding bromide, and this than the cyanide, the germicidal powers of these salts falling into the same order. The general antiseptics and anthelmintics and the specifics and their action are very thoroughly reviewed, special attention being given to the organic derivatives of arsenic and their poisonous influence on the protozoa. Antitoxins, serum-therapy, and immunity are also fully treated.

At the end a new chapter has been added in which are collected several problems of general pharmacology that were previously to be found in various parts of the work. These are chiefly connected with the conditions necessary for and affecting the therapeutic action of potent drugs. Defects in the book are really scarce; a constitution is ascribed to antipyrin, however, which cannot be reconciled with the synthesis of the substance from methylphenylhydrazine and ethyl acetoacetate. The addition of an index of authors' names, or at least the inclusion of these in the general index, would be an improvement. The references given are copious, including much recent work, and the diagrams are remarkably clear, coloured ink being used in many cases. The authors are to be congratulated upon a masterly treatment of their subject.

A Text-book of Experimental Psychology, with Laboratory Exercises. By CHARLES S. MYERS, M.A., M.D. Cantab., Sc.D., of Gonville and Caius College, University Lecturer in Experimental Psychology, Cambridge. Two Vols. Second edition. With 1 plate and 66 figures and diagrams. Cambridge University Press. 1911. Pp. 344 and 107. Price 10*s.* 6*d.* net.

WE extend a cordial welcome to the second edition of Dr. Myers's well-known text-book. By the separation of the systematic from the exercise part of the work reference from one to the other is rendered more easy. A considerable amount of new material has been incorporated. Much of the matter of psychological interest dealt with by Dr. Henry Head in his recent Croonian lectures on the Sensory Functions of the Thalamus and Cortex[1] is included in this edition, and the original text has been subjected to a thorough revision. Chapters on cutaneous, visceral, auditory, labyrinthine, motor, visual, gustatory, and olfactory sensations are followed by others on memory, muscular and mental work, psycho-physical methods, muscular effort, binocular and binaural experience, the visual perception of size and direction, time and rhythm, feeling, and attention. There are not a few questions of psychological importance on which Dr. Myers adopts a "not proven" position, quoting rival theories and placing them with conspicuous fairness before the student, at the same time criticising their defects and encouraging the latter to form his own conclusion. In paragraphs on psychological topics of secondary importance—as, for instance, those on the so-called "central" sense of muscular effort—the reader will find the same admirable scientific spirit exemplified. The qualities of lucidity and conciseness enhance the value of the book. The bibliographies at the end of the chapters are very serviceable. The series of exercises fulfil their purpose satisfactorily.

No worker in psychology can afford to dispense with this excellent text-book, while the physician opening it at random will find material to engross him on almost every page.

[1] THE LANCET, Jan. 6th, 13th, and 20th, 1912.

LIBRARY TABLE.

Materia Medica, Pharmacy, Pharmacology, and Therapeutics. By W. HALE WHITE, M.D. Lond., M.D. Durh. (Hon.), Senior Physician to, and Lecturer on Medicine at, Guy's Hospital. Twelfth edition. London: J. and A. Churchill. 1911. Pp. 695. Price 6*s.* 6*d.*—The fact that a work has reached a twelfth edition is sufficient proof of its value and popularity, and no words are needed from us as to its nature and scope. Dr. Hale White's book has been found to be one of the very best treatises on the subject, and the present edition maintains that position. Every care has been taken to bring it thoroughly up to date. The letterpress is not confined to a description of official preparations, but many that are not official are also considered, so that a vast amount of useful information has been collected together. The form in which the subject matter has been arranged and the essentially practical character of the remarks alike command attention and reward perusal. We cordially recommend this manual as valuable both to students and practitioners.

New Tracts for the Times: 1. *Problems of Sex.* By J. ARTHUR THOMSON and PATRICK GEDDES. 2. *Womanhood and Race Degeneration.* By MARY SCHARLIEB, M.D., M.S. Lond. 3. *National Ideals and Race Regeneration.* By the Rev. R. F. HORTON. London, New York, Toronto, and Melbourne: Cassell and Co., Limited. 1912. Pp., in one vol., 63. Price 6*d.* a volume.—These "New Tracts for the Times" are published under the auspices of the National Council of Public Morals, a body whose end is race regeneration. And although the movement for race regeneration is apparently a novelty, it must be remembered that thinkers in all ages have written and spoken on the subject, for the wish and the desire to make men better has been the ideal of many leaders of thought from Plato through St. Augustine down the ages to the Dominicans and Franciscans, More and the Quakers, Wesley and Whitfield, the writers of the old Tracts for the Times, and impersonal societies such as University and other "Settlements," which are at work in our large towns. The three tracts before us do not suggest remedies or methods of operation, but state in simple language the ideals which should be aimed at. Professor Thomson and Professor Geddes, professors respectively of zoology in the University of Aberdeen and of botany in the University of St. Andrews, are well known for their researches into, and writings upon, sex problems, and they have written an excellent little book treating the subject from the evolutionary and biological points of view without in any way glossing over or minimising the dangers and difficulties which attend the sex impulse which is at once "the glory and the shame of mankind." We have rarely seen a work in which the canon is so forcibly and plainly laid down that "uncontrolled sexuality cannot remain a purely personal vice." It may seem strange in connexion with the problems of race degeneration to refer to a French romance, but many persons will read novels who will not read "tracts" or scientific treatises, and there is a book by Claude Farrère, called "Les Civilisés," which preaches a sermon on self-control, pointing out the terrible wreckage of human lives which follows its absence, and insisting incidentally on the duty which parents owe their children to bring them up in the way in which they should go. The sermon if read aright makes it plain to all who read that the wages of sin is death.

Mrs. Scharlieb's paper deals with the training of women, woman's influence on the race, and on women as citizens. All three chapters are sound and sensible. Mrs. Scharlieb

does not spare her own sex in one matter at any rate—namely, their tendency to be hard and exacting as employers. She lays especial stress upon the need to a community of a religion. We agree with her. It is not our province to insist upon one religion more than on another, but we are certain that no race or country can flourish in which men do not remember the dictum laid down by an easy-going Epicurean heathen—namely, Horace—who told his countrymen to remember

Dis te minorem quod geris, imperas.

The Rev. R. F. Horton discusses National Ideals, and, in his first chapter, the question What is a Nation? Incidentally, too, he discusses the relation of the British nation to the Empire. The problems of national ideals naturally connote political questions, and here again it is no business of ours to take sides, but there is one remark of Dr. Horton's which, judging by articles and correspondence in the daily press, may be cordially recommended to politicians of all complexions. It appears on p. 51, and runs as follows: "Suffer anything rather than lie; recognise that no good cause, least of all the best, can ever be served by lying."

Selbstbefreiung aus Nervösen Leiden. Von Dr. Med. WILHELM BERGMANN, Lietendem Arzt an der Kaltwasserheilanstalt in Cleve am Niederrhein. Freiburg: Herdersche Verlagshandlung. 1911. Pp. 295. Cloth, 4*s*.—This little volume is intended as a sort of "manual of self-help" for all whose "nerves" are the weakest and least healthy part of their organism. The author feels that mere consultations with a physician can do relatively little towards putting such patients on their feet again, in a metaphorical sense, inasmuch as his time is of necessity limited, and he can as a rule only point out the way; it is in the carrying out of his instructions that the patients fail. What is wanted is some dynamic to inspire and stimulate them to renewed effort on their own behalf in the absence of the physician. Mental re-education will accomplish much if the patient knows how to set about it. The author takes the nervous patient into his confidence and indicates how by daily exercise of his own faculties the latter can escape from the pessimism and depression under which he labours. The language of this "manual" is simple and untechnical, and the book may with advantage be put into the hands of those who can be brought to believe that they can work out their own salvation. There is nothing that is novel and much that is hackneyed in its pages, and it may be questioned whether the author's methods are applicable to all the cases of functional nervous disease, a description of which he supplies in the first part of the book. There can be no doubt of his sincerity and enthusiasm; at the same time, the frequent use of the familiar "du" and a superabundance of poetical and other quotations give the impression of a certain tendency to "preach" which may be calculated, we think, to defeat its own ends. We can admire, however, the spirit in which the book has been written; its general tone and the hopefulness of its outlook deserve hearty commendation.

Contributions à l'Étude du Traitement des Tuberculoses Externes par des Injections Modificatrices. Les Injections d'Huile Gomenolée. Par Dr. JACQUES TRIBES, Ancien Externe des Hôpitaux de Paris, Interne de l'Asile National des Convalescents des Hôpitaux de Paris à St. Maurice. Paris: A. Maloine. 1912. Pp. 82. Price 2 francs.—The author here presents the results of his investigations carried on for two and a half years at the Hôpital Bretonneau and the Hôpital Trousseau. He gives a historical *résumé* of the treatment of external tuberculous conditions by various injections, going back as far as Fabricius ab Aquapendente, who injected oxymel to disperse tuberculous fungosities. He describes the various agents that have been employed—iodoform, camphorated naphthol, and camphorated thymol—and finally gomenol, which his pamphlet is written to advocate. Gomenol is a distilled extract of the young leaves of a variety of *Melaleuca viridiflora*. Its characteristics have been determined by Professor Bertrand, of the Institut Pasteur at Paris. The preparation used by Dr. Tribes is a 20 per cent. oil of gomenol, about 1 to 2 c.c. being injected. He claims that considerable quantities can be deposited within the affected tissues without inducing intense inflammatory symptoms or intoxication. He describes the technique, and gives a series of cases. The thesis obtained the bronze medal of the Assistance Publique.

MISCELLANEOUS VOLUMES.

DURING the last few days we have received for review a good many novels. We can only spare space to say a few words about some of them, but this is not because we consider that novels make little appeal to the medical man. On the contrary, the number of our readers who also read novels appears to be quite large. *The Chink in the Armour*, by Mrs. BELLOC LOWNDES (London: Methuen and Co., Limited. 1912. Pp. 316. Price 6*s*.), is a thoroughly good sensational story. Mrs. Belloc Lowndes knows her types to their finger nails, can invent a *milieu* for them that exactly suits the parts which they have to play, and writes with ease and distinction. She also has the rare gift of being able to produce thrills; we cannot particularise the parts in her story where this admirable quality were particularly in evidence without disclosing the details of the plot, and that in the case of this story would be unpardonable.—*In a Cottage Hospital*, by GEORGE TRELAWNY (London: T. Werner Laurie. 1911. Pp. 241. Price 2*s*. net). What are the conditions that according to Mr. George Trelawny obtain in the smaller hospitals of the country? In "Rebley Hospital," as depicted by him, the nurses and ward sisters are nearly all women of loose character; the matron habitually neglects her duties to run after a hypocritical and dipsomaniac preacher, and doubles her income by means of secret commissions from the tradesmen, in which last offence most of the hospital committee are also implicated; pages are devoted to descriptions of most brutal ill-treatment of the patients, who, moreover, are subsisted habitually on putrid food, for the profit of the matron and the secretary; the "hospital comforts" are stolen by the nursing staff from the patients' bedsides, wherewith to treat their male guests at their orgies in the nurses' parlour, where they pass their time in drunken lewdness with members of the visiting staff and the committee; nearly all the honorary medical staff are incompetent, and the one more or less competent surgeon attempts brain operations in a state of drunkenness with callous indifference to their fatal results; another member of the visiting staff stays away from the hospital for weeks, and even months, ostensibly to play golf, but really, it is suggested, to spend the time with one of the nurses, for four out of five of the staff have their paramours among the nurses. Nurses, matron, and medical staff drive without any regard for decorum to a public *fête*, where they become the worse for drink in public. The senior surgeon (a professional abortionist, by the way, who keeps a record book of his malpractices), while drunk, induces abortion in the hospital with fatal results on a nurse of whose condition he is himself the author, and to whom the unsophisticated house surgeon, in ignorance of her obviously wanton character, has become engaged. Failing to fasten the guilt on the innocent house surgeon—who, by the way, had also misconducted himself with the victim—he poisons himself. And lest there should be any doubt of the author's meaning,

the closing words of the book (in italics) are: "Reader, there is many a Rebley Hospital in England to-day!" while the preface says that the details "are true in substance and in fact." It is a matter for wonder that any publisher should be found willing to put his name to such a childish and malignant work.——If humour really possesses restorative power as is asserted, *Letters from China and Some Eastern Sketches*, by JAY DENBY (London: Murray and Evenden, Limited. 1911. Pp. 438. Price 6*s*.), deserves to be read by every medical man, not only for his own entertainment, but to recommend as a possible auxiliary to treatment in certain cases. Its humour is really humorous without being coarse, while those who are acquainted with Shanghai will appreciate the fidelity of its limning. The book is perhaps distinctly reminiscent of various writers, but they are all at least praiseworthy models. For instance, the "Letters from China" remind one at not infrequent intervals of Mark Twain and again of Jerome. Of the shorter sketches, some —e.g., "The Griffin"—recall Kipling's "Plain Tales from the Hills"; others—e.g., "A Question of Method"—Anthony Hope's "Dolly Dialogues." But they have also a spirit of their own; they are no mere copies. It is a fresh and exhilarating book.——The preface to a twelfth edition of *Round the Red Lamp*, by Sir CONAN DOYLE (London: Methuen and Co., Limited. Pp. 224. Price 1*s*.), consists of an extract from a letter by him to an American correspondent, in which he says: "The province of fiction is to treat painful things as well as cheerful ones. The story which whiles away a weary hour fulfils an obviously good purpose, but not more so, I hold, than that which helps to emphasise the graver side of life. A tale which may startle the reader out of his usual grooves of thought and shock him into seriousness, plays the part of an alterative and tonic in medicine, bitter to the taste, but bracing in its results." An excellent statement of the case, so long as judgment is exercised in the selection of the patient for the remedy. But as a book about medical men by a medical man the "facts and fancies of medical life" detailed in "The Red Lamp" have proved, and will doubtless continue to prove, interesting reading for medical men. ——A decidedly interesting story to while away a leisure hour is *A Giver in Secret*, by THOMAS COBB (London: T. Werner Laurie. Pp. 253. Price 2*s*. net). The secret gift on which the title is founded is an unknown benefaction of £500 to a charming young orphan daughter of an adventurer, at the very time when certain facts point to her as the possible thief of jewels from the cousin of the man to whom she is engaged. The sudden change in her circumstances, which she can explain only by what appears to be a cock and bull story, naturally leads to complications, the serious effects of which, however, disappear on the arrest and confession of the actual thief. But there is no anti-climax even then, for interest is still retained while seeking the anonymous giver. The story is well told, except for a certain trying tendency to run on without break or stoppage in the same chapter to events that are subsequently discovered to involve a change of time and place from that under consideration in the preceding sentence.

Of books of personal reference one would think there was an ample supply, what with "Who's Who," and various professional, philanthropic, artistic, literary, and other Guides and Directories. Yet the *Personal Calendar, a Monthly Index of Political, Official, and Social Changes* (London: E. Mansfield and Co. No 1, January, 1912. Price 6*d* monthly, by post 7*d*.), fills an undeniable lacuna. Year books of personal reference clearly become more and more out of date with each passing month. Fresh births, deaths, marriages, appointments, retirements, promotions, and honours occur from day to day, and the task undertaken by this unpretentious little pamphlet is to keep the year books fully up to date. The cumulative index of names, which occupies nine columns of small print, shows how much has been condensed into 34 pages. In addition to the January happenings there is also a December supplement, suggested by the fact that annual books of reference go to press some weeks before their nominal date of publication, Jan. 1st. It is possible that this little work will soon become as indispensable as our annuals now are.—— Another reference work is *The Matriculation Directory* for January, 1912, published by the University Correspondence College, Burlington House, Cambridge, and Red Lion-square, London (price 1*s*.). It supplies the intending graduate of the University of London with a summary of the regulations governing the various examinations for degrees and with the questions set at the last matriculation examination. Answers to these questions are fully worked out and, where necessary, illustrated. Information is also given as to the scope and relative difficulty of the obligatory and optional subjects.—— Most medical men at some time or another require information as to the different Insurance Offices. The *Insurance Register* (*Life*) for 1912 (London: C. and E. Layton. First edition. Pp. 152. Price 1*s*.), now in the forty-third year of publication, will give them information as to the various English and American Companies, a Directory of Companies, general statistical information, the comparative rates of the various offices, and such like. It is proposed in future to issue three editions in each year—in January, May, and September respectively.——*Layton's Handy Newspaper List* for 1912 (London: C. and E. Layton. Pp. 167. Price 6*d*.) is now in its twenty-second year of publication. It gives the titles, price, date of establishment, politics or class, and address of all the principal daily, weekly, monthly, and quarterly papers and periodicals in the United Kingdom. The towns in which the various journals are published are aranged alphabetically, with the exception of London, which comes first.

JOURNALS AND MAGAZINES.

Quarterly Journal of Experimental Physiology. Edited by E. A. SCHÄFER, F. GOTCH, W. D. HALLIBURTON, C. S. SHERRINGTON, E. H. STARLING, and A. D. WALLER. Vol. IV., No. 4. London: Charles Griffin and Co., Limited. 1911. Pp. 305–397 + vii. Price 6*s*.—1. Kenneth Mackenzie (Freeland Barbour Research Fellow, Physiological Laboratory, University of Edinburgh): An Experimental Investigation of the Mechanism of Milk Secretion, with Special Reference to the Action of Animal Extracts. After a short introduction on what was previously known regarding the origin and mode of conveyance of stimuli influencing the growth and secretory activity of the mammary gland, the author describes his own experiments. The first person to show conclusively that animal extracts containing hormones may directly stimulate the mammary secretion was Ott, of Philadelphia, who found that "infundibulin is a galactogogue" (October, 1910). The author made extracts of the following five organs and injected them into a vein in cats in varying stages of lactation: pituitary body, corpus luteum, pineal body, lactating mammary gland, and involuting uterus. The mammary gland is, as regards its secretory activity, not under the direct influence of the nervous system, so that the agents which excite or inhibit its activity reach it by means of the blood-stream. The five organs above enumerated produce hormones which stimulate the activity of the gland, and in this respect the galactogogue substance of the posterior lobe of the pituitary body is most powerful. This substance is not specific to mammals, it is also present in the pituitary gland of the

bird. Hormones which inhibit the milk secretion are produced by the fœtus and placenta. Drugs, such as pilocarpine, which cause marked activity of most other glands, and others, such as atropine, which inhibit most glands, have no effect on the secretion of the mamma. The author comes to the conclusion that there are no secretory nerves in the mammary gland, a conclusion supported by the fact that neither section of the nerve trunks supplied to this gland nor their faradic stimulation appears to have any influence on the secretion of milk. 2. T. Graham Brown (Carnegie Fellow), Physiological Laboratory, University of Liverpool: Studies in the Physiology of the Nervous System (No. IX.); Reflex Terminal Phenomena; Rebound; Rhythmic Rebound and Movements of Progression. This is a most elaborate research into the phenomena which occur in that phase of a reflex action which immediately succeeds the cessation of the stimulus, and persists until the primary state of balance is again attained. It is a continuation, extension, amplification, and verification of much work already done and foreshadowed by Sherrington, with the addition of much new matter on a very important, but highly technical, aspect of reflex action. It is an extremely thorough piece of work, which cannot be summarised, indeed the author's own "summary" extends to three pages. It will be specially interesting to physiologists and neurologists, who, however, must be conversant with the nomenclature of the subject in order to follow with profit the intricacies of the problems so fully illustrated and discussed. This part also contains the index for Vol. IV.

Reports and Analytical Records.

FROM

THE LANCET LABORATORY.

EUCERIN.

(P. BEIERSDORF AND CO., 7 AND 8, IDOL-LANE, LONDON, E.C.)

EUCERIN is a very interesting fatty substance which is described as the "hydrophile" of wool fat—that is to say, it is the constituent chiefly responsible for the water-absorbing properties of lanoline preparations. It has been shown that the water-absorbing capacity of wool fat is not due to the cholesterin bodies, but to other wool-fat alcohols. Recently these alcohols have been isolated in a more or less pure state, and the result is a product which forms the active water-absorbing basis of a cool and soothing ointment. It suffices, for example, to mix but 2 per cent. of it with vaseline to form a fatty mixture which will absorb as much as 500 per cent. of water. It is obvious that there is a wide field for eucerin, because it presents clear advantages over fatty bases hitherto in use. Being a powerful absorbent of water, it follows that it will have cooling soothing properties, while it is practically odourless and free from liability to become rancid. Anhydrous eucerin is a jelly-like looking mass which readily takes up water, forming a pure white creamy-looking paste. It is perfectly compatible with a good many medicaments of acknowledged value in the treatment of skin diseases.

(1) PATENT BARLEY; AND (2) PATENT GROATS.

(KEEN, ROBINSON, AND CO., LIMITED, DENMARK-STREET, ST. GEORGE'S-IN-THE-EAST, LONDON, E.)

1. This method of preparing "patent barley" is neat. The facility, for example, with which barley water may be prepared from it renders it very economical in use; it yields its important constituents to boiling water more readily than ordinary pearl barley. Barley water possesses properties the reason for which do not clearly appear. It is well known, for example, that it assists in the assimilation of milk in infant-feeding by preventing apparently the casein from separating into large clots when it comes into contact with the acid juices of the stomach. It also acts as an agreeable demulcent, a property which is probably due to substances other than starch, while being a wholesome and refreshing beverage. 2. "Patent groats" offer advantages similar in character to patent barley. They are free from cuticle and irritating particles and yield a maximum amount of their food constituents when prepared in the ordinary way. The sample examined was free from a certain oily smell which ordinary oatmeal sometimes possesses, and the result, after cooking, is a gruel, bland and smooth in character.

(1) SPECIAL OIL SILK; AND (2) WATERPROOF SHEETING.

(NEW PEGAMOID, LIMITED, 134, QUEEN VICTORIA-STREET, LONDON, E.C.)

The fabrics submitted to us proved to be excellent examples of oil silk. They are impervious to water and resist perfectly the action of the antiseptics commonly used in medical practice. We made a number of experiments, endeavouring to act upon the material with solutions containing respectively carbolic acid, corrosive sublimate, formaldehyde, boric acid, iodine, and so forth. There was no destructive action in any case, but iodine led to a slight discolouration. Even hot alcohol did not appear to take out any serious amount of the wax veneer. Boiling water, although in the presence of antiseptics, does not harm the material. The specimens submitted to us comprised a series of oil silks of different colours and a waterproof sheeting which seems to us to be very well adapted for hospital work. When heated with caustic alkali the waterproof coating was removed and left behind a pure cotton fabric. The alkali contained a fatty acid.

JUNORA.

(MESSRS. HUMPHREY TAYLOR AND CO., 45, NEW OXFORD-STREET, LONDON, W.C.)

This is described as a wine containing products derived from lecithin-ovo, and the description was confirmed by our analysis, since it disclosed the presence of choline and of organic phosphates. By suitable treatment the crystalline platinum salt of choline was obtained. Further, when analysis was directed to the separation of ordinary phosphates from organic phosphates, the total phosphoric acid found (P_2O_5) on complete oxidation was 0·0461 gramme per 100 c.c., while the phosphoric acid due to inorganic phosphates was found to be 0·0220 gramme per 100 c.c. The difference therefore, 0·0241 gramme, represents the phosphoric acid present in organic combination (glycerophosphate). The presence of organic phosphates explains the claim made for this wine in regard to its value in nutrition. The amount of organic phosphoric acid found represents a little over 1 grain of lecithin per fluid ounce, since lecithin contains 8·8 per cent. of phosphoric acid. The lecithin employed is prepared from egg yelk by a process which we have seen in operation. Further examination gave the following results. Alcohol by volume, 16·24 per cent.; extractives, 9·48 per cent.; sugar, 7·35 per cent.; glycerine, 0·574 per cent.; volatile acidity reckoned as acetic acid, 0·12 per cent.; fixed acidity reckoned as tartaric acid, 0·27 per cent. The basis is a sound wine of a delicate character.

DECODOL.

(AGENTS: THOS. CHRISTY AND CO., 4, 10, AND 12, OLD SWAN-LANE, UPPER THAMES-STREET, LONDON, E.C.)

Decodol is described as a dry emulsion of cod-liver oil, protein, and carbohydrates, a description which was borne out by analysis. We found it to contain moisture, 6·72 per cent.; mineral matter, 4·68 per cent.; cod-liver oil, 28·00 per cent.; carbohydrates, 26·56 per cent.; protein, 34·04 per cent. Decodol is a light brown powder with oily

touch and smell. It is a highly nutritive compound which should have many special purposes.

PROTEIN FOOD WITH ORGANIC PHOSPHATES.

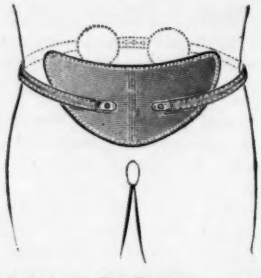
(R. HOGG AND SON, 1, SOUTHWICK-STREET, LONDON, W.)

Our examination of this food confirmed the description of it to the effect that it is prepared with casein and glycerophosphates. We found it to contain 76·55 per cent. of protein, 7·90 per cent. mineral matter, and 14·30 per cent. moisture. The mineral matter contained a little more than half its weight of phosphoric acid. The preparation is well made and an important feature about it is that it softens very readily with water, forming a uniform pulpy mixture to which milk or water can be added. The powder is thus uniformly distributed, and the fluid so prepared is free from coarse lumps or unsoftened particles.

New Inventions.

A NEW ABDOMINAL SUPPORT.

THE abdominal support here illustrated has been designed in accordance with the suggestion of Mr. Arbuthnot Lane, with the object of providing a constant support in enteroptosis, visceroptosis, post-operative cases, floating kidney, anteversion of the uterus, varying forms of hernia, and so forth. It consists of two triangular aluminium plates with the vertical edges running parallel to each other and hinged together by a covering of soft leather. The pressure pad thus formed for covering the whole of the lower abdomen is kept in place by two half circular springs which are pivoted to the plates in front and terminate at the back in two soft elliptical pads.

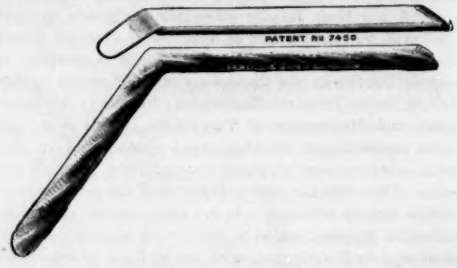


These back pads help to distribute the pressure, which can be varied by the use of light or heavy springs. The direction of the pressure can be varied by altering the position of the springs. The support fits comfortably to the body, and the advantages which are claimed for it are: direct antero-posterior pressure of any desired degree; the springs being shaped to fit the pelvis, there is no binding or cramping the hips; it will keep its position on almost any shaped abdomen, without the use of perineal straps; it is applied or removed by means of one strap and stud, and is easily done in half a minute; being made of metal it has a longer life than any ordinary belt, without being any heavier.

Messrs. Walton and Curtis, 190, Broadhurst-gardens, West Hampstead, London, N.W., are the manufacturers.

ENVELOPE FOR TONGUE DEPRESSORS.

MEDICAL inspection of school children has its own problems, and one of these is the efficient examination of the throat without the risk of carrying infection from one to the other by the tongue depressor. Boiling or steaming the instrument is in nearly all cases impracticable. Disinfection by chemicals has many disadvantages. To obviate these a great number of medical officers use wooden depressors which are burned immediately after use. This is a safer and cleaner method than by the use of one common depressor for all, whatever the disinfectant employed. Wood, however, has also its disadvantages: it is too bulky for carrying about; it is not pure white and so does not reflect the light; and where there are no open fires, and in summer time when there are no fires at all, there is a practical difficulty in getting them burned. A very simple expedient, and one which has several good points in its favour, has been patented and placed on the market by Messrs. Arnold and Sons, Giltspur-street, London, E.C. It consists of an envelope made of specially prepared paper which fits on to an angular depressor. The portion applied to the tongue is of double thickness, so that there can be no risk of organisms passing



through. At the proximate (open) end there is a "tab" on which the finger rests to steady the envelope. This also serves as a catch by which to pull off the envelope after use, thus preventing any portion which has been in the mouth coming in contact with the medical officer's fingers. The small amount of room they occupy in the wallet, the enhanced "illumination" of the throat by the white paper, the facility with which the envelopes can be burned and disposed of, together with the efficiency in preventing throat-to-throat infection, should make this little contrivance a most useful item in the school medical officer's outfit. The same advantages will also commend it to the general practitioner.

DONALD MURRAY, M.B., C.M. Glasg., D.P.H. Aberd.
Stornoway.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* The chair of Mental Diseases, until recently held by Dr. Ziehen, has been offered to Dr. Karl Bonhoeffer, Professor of Psychiatry in the University of Breslau, who was formerly Professor in Königsberg and afterwards in Heidelberg. As he is only 43 years of age his promotion has been remarkably rapid. If he accepts the present invitation he will have occupied the chair of his specialty in four German universities in nine years.—*Breslau:* Dr. Erich Feiler has been recognised as *privat-docent* of Odontology.—*Prague:* Dr. Alexander Skutetzky, a military surgeon in charge of the medical wing of a garrison hospital, has been recognised as *privat-docent* of Medicine.—*Rennes:* The chair of Chemistry has been divided into two, one of Analytical and Toxicological Chemistry, and one of General Chemistry, Dr. Lenormand, the present professor, taking the first, and Dr. Laurent, Professor of Pharmacy, the second. To the chair of Pharmacy Dr. Perrier has been appointed.—*Vienna:* It is now stated that Dr. v. Noorden, one of the professors of medicine, will not leave Vienna for Frankfort, as he was expected to do.

STATE AID FOR RESEARCH IN MENTAL DISORDERS.—At a meeting last week the visiting committee of the Cardiff Mental Hospital passed a resolution expressing its opinion that it was desirable that State aid, in the shape of grants, should be sought in the domain of research in mental disorders, such grants to be distributed through the Commissioners in Lunacy, as is done in the case of research in public health through the Local Government Board. It was pointed out that such research is liable to be expensive, and, since it is of national and not merely of local importance, it does not seem reasonable that local authorities should have to find all the funds. The results of researches made with the aid of such grants would be published in the Lunacy Blue-book. A further resolution was recorded to the effect that the town clerk circularise the public asylums and registered hospitals of England and Wales with a view to ascertaining whether they were prepared to join, in the first place, in approaching the Commissioners in Lunacy in the matter in order that the latter might make a representation to the proper quarter.

THE LANCET.

LONDON: SATURDAY, MARCH 9, 1912.

The National Insurance Act and the Modern Interpretation of the Hippocratic Oath.

THE famous "Oath" of HIPPOCRATES is probably the earliest extant recognition, on the part of a distinguished practitioner of medicine, of the nature and extent of the obligations of the members of his calling towards their predecessors, their patients, and the public; and it is interesting just now to inquire in what degree the principles underlying it may be considered to have stood the test afforded by the experience of some 2300 years, and to retain their applicability to the conditions of our present environment. At a period when instruction in the healing art is not only readily available, but is offered in return for payment by many competing schools and institutions, it is perhaps unreasonable to regret the weakening of the bond between teacher and pupil which has manifestly occurred since the "Oath" was framed; and there is still much reason to hope that, although the pupils at a modern hospital and school no longer regard the physicians and surgeons of the staff as being "equally dear to them as their parents," they nevertheless retain towards many of them very strong feelings of affection and respect, founded upon a correct appreciation of their several characters and endowments, and upon a grateful recollection of the benefits conferred by their teaching. The expressions of personal regard which have been evoked during the last few weeks by the deaths of Lord LISTER, Sir HENRY BUTLIN, and Sir WILLIAM ALLCHIN prove that the sentiment enjoined by HIPPOCRATES is strongly developed with us. The undertaking to impart a knowledge of the healing art, with certain filial exceptions, only to "disciples bound by a stipulated oath," manifestly contains the germ of the obligation now entered into by the newly affiliated in many of the modern licensing bodies, in the shape of a promise to maintain the honour of the fraternity into which they have been granted admission, and to bear themselves in a manner worthy of the members of a benevolent and honourable calling. And, if we may assume that the "stipulated" oath was identical in its terms with that in which it is referred to, we find that it simply amounts to an undertaking to practise uprightly and honourably, to live cleanly, to refuse assistance to would-be poisoners, abortionists, or suicides, and to preserve secrecy with regard to the private affairs of patients and of their households. We must perforce admit that the increased complexities of modern life have added to the responsibilities of practitioners, and have created new standards of duty in relation to contingencies of various kinds; but the fact remains that the foundations of these standards are as old as the practice of medicine, and that they were plainly set forth by the father of our art before the visible dawn of the Christian ethics which they nevertheless embody. The most upright of modern practitioners might add to the "Oath" of HIPPOCRATES in matters of detail, but could take nothing away from it, and would be compelled to admit that his additions were of detail only, and were, in all essentials, practically comprised within the simple and stately language of the original.

A remarkable omission from the "Oath," however, regarded by the light of more modern experience, is that it contains no explicit reference to the duties of practitioners towards each other, an omission probably due to the comparative scarcity of physicians at that period of the world's history, and to the consequent rarity of the occasions on which they could be brought into collision. But circumstances having changed, and human nature being what it is and always has been, we now have the difficulties among us engendered by professional competition. The claims of rival medical practitioners are necessarily of a kind only too likely to lead to the mortification of him who fails to make good his ascendancy, and mortification too often means loss of self-control, with loss of dignity to follow it. But we conceive that the very requirement of the stipulated oath from pupils, between whom it must have formed a bond of considerable tenacity, was in itself a definite, even if only an implicit, recognition of admission into a brotherhood; and it is probable that the matrons of Cos, however critical of the way in which a practitioner should behave, were afforded but slender opportunities of instituting damaging comparisons between candidates for their fees, who would almost certainly have been taught that the only way to secure the respect of the public was to show respect to one another. We greatly doubt whether the physicians of the Hippocratic era would have suffered loss of self-command to lead them into the spitefulness of opponency which unfortunately became characteristic of a period of brilliant literary and scientific awakening in Europe and in England, a period which furnished MOLIÈRE with his medical types, and which survived in this country at least until after the exchange of bitter epigrams between Dr. GEORGE CHEYNE and Dr. WINTER, or the publication of the successive editions of Dr. GARTH'S "Dispensary." May we not now recognise a return to the self-control and forbearance of an earlier age, and an increasing recognition of the duty of respecting the position assumed by brethren in the art, even on occasions when we cannot recognise its complete advisability or accuracy. The gifted President of the Royal College of Surgeons of England, whose loss we have lately had to deplore, is quoted as having declared that the medical man has three duties, "his duty to his patient, his duty to his profession, and his duty to himself." The Hippocratic Oath seems to us, in its essential characters, to leave none of these duties unregarded or unprovided for, and those who abide by its prescription will find themselves in possession of a code as practical as it is inspiring.

And if ever there was a time in which it was necessary to strengthen the tie of professional brotherhood by every

argument which can be founded either upon the precepts of antiquity or upon the experience which has been garnered since those precepts were originally framed, surely that time is the present. We are face to face with the fact that an Act of Parliament has been passed which, though professedly framed for the encouragement of national thrift, in its present shape threatens the very existence of the profession of medicine. Important sections of this Act might entail, if they were carried out in the manner intended by those who framed them, and if no safeguarding regulations are forthcoming, the committal of many thousands of the labouring population of this country to the professional care in sickness of medical men who would be so badly remunerated as to render it impossible for that care to be in any way representative of present day standards either of diagnosis or of treatment. Even in the existing state of public business such an Act could hardly have been passed had it not been for the appalling ignorance of the average politician on all matters connected with or arising out of science; an ignorance which, in relation to health questions, was lately declared by a medical writer to be dependent on the fact that the average member of the House of Commons had usually obtained his notions of medicine in the nursery, and from a nurse to whom they had been handed down by her grandmother. Throughout the debates on the Act there was displayed by speakers on either side of the House little clear comprehension of the essentially scientific character of good medical work, of its difference in point of principle either from a handicraft, in which any common man can acquire proficiency, or from a profession like the law, in which every point hitherto decided is set down in books, and is so available for reference as often to place the novice on the same plane as the more experienced. But it was allowed in the House of Commons, in words, that no man of ordinary capacity can do his duty to the sick under the continued pressure of sordid cares, and hence that a proper remuneration of the medical profession, as a body, is essential to a complete utilisation of their powers as guardians either of private or of public health. A serious diminution in the aggregate of medical incomes, especially occurring at a time when many of the necessities and comforts of life are steadily rising in price, would immediately check the flow of students from the classes which now chiefly furnish them; would compel a lowering of the cost, and a consequent impairment of the quality, of medical education; would recruit the profession from the comparatively untaught; and would not only lower the moral and the intellectual tone of its followers, but would place grave impediments in the way of research and of discovery. From such evils as these it is the duty of all practitioners to protect at once their own body and the public, and they can only do so effectually by presenting a united opposition alike to menaces and to blandishments, and by absolutely refusing to take any contracts under the Act except upon terms which will yield a proper and reasonable return. Our duties lie in the future, and in such a display of unity in our ranks as may convince the most sceptical of our determination, and may show that the brotherhood, which is at least indicated in the spirit of the Hippocratic Oath, has survived the lapse of centuries without diminution or decay.

The Discovery of Anæsthesia.

IN an interesting paper, the first part of which appears in another column, Dr. DUDLEY W. BUXTON urges the right of Dr. CRAWFORD W. LONG to be regarded as the pioneer of anæsthesia. The other protagonists are relegated to a position less prominent, as whatever their claims CRAWFORD LONG had anticipated them in the discovery. The dramatic events following CRAWFORD LONG'S pioneer work are grouped about HORACE WELLS, C. T. JACKSON the chemist, and W. T. G. MORTON. None of these men, it appears, knew of CRAWFORD LONG'S work, and only one of them, JACKSON, possessed any scientific knowledge concerning ether. WELLS in 1844 had noticed that during nitrous oxide inhalation those who inhaled became unconscious of pain. He determined to administer the gas, doing so from a bladder, to assuage the pain of tooth extraction. The trials proved successful, and he with MORTON, who had been his pupil and partner, gave a public demonstration. This was, however, a fiasco, and apparently WELLS forsook his "discovery."

MORTON still sought for practical anæsthesia. Having terminated his partnership with WELLS he built up a lucrative practice as a dentist and aspired to a medical qualification. This ambition brought him into touch with JACKSON, whose pupil he became. Chloric ether was commonly used by dentists, and MORTON noticed that after applying it to the tooth the gum tissues were obtunded. This suggested the use of chloric ether as an anæsthetic, and so JACKSON experimented with it, but when employed for human beings it was a failure. It will be recalled that this same drug was tried in some London hospitals soon after SIMPSON'S announcement of his success with chloroform, but again its use was accompanied by failure. Nothing daunted, MORTON requested JACKSON to supply nitrous oxide for his patients. The latter suggested sulphuric ether as being easier to obtain and kindred in action. JACKSON knew these facts as common knowledge among chemists. MORTON was unaware of the action of ether and, possessed by the courage of ignorance, he obtained sulphuric ether and experimented with animals. Success attended his efforts. The next step was to test his discovery upon himself. Inhaling from a long-necked bottle—"Morton's sucking-bottles," as Dr. WESTCOTT so contemptuously termed them, when "Morton-baiting" had become a fashionable pastime among dentists in Boston—he became nearly asphyxiated. Then a handkerchief soaked in ether was substituted and alone in his room MORTON felt himself passing into unconsciousness, as he describes it, with a sickening horror lest there should be no awakening. He had noted the moment of commencing to inhale, and when he awoke he found that he had been unconscious for seven minutes. Such experiments done on oneself evince courage and grit, even if the supreme dangers courted are but vaguely appreciated. That same night to MORTON came EBEN FROST to have a tooth extracted, and, being a fearful soul, he begged to be mesmerised. The chance had come; MORTON'S assurance of "something better than mesmerism" appealed to the man with the aching premolar whose state brooked of no delays. The ether was given, the tooth taken out, and FROST

remained stark in the chair. Again the haunting horror assailed MORTON—was the man dead? MORTON applied the water test by emptying a bowl in FROST'S face. This happily caused a rude awakening, and MORTON hoped that for him had come fame and fortune.

It is interesting to note that, as BIGELOW relates, MORTON'S first essay to etherise a private patient in a surgical operation nearly ended in disaster. Luckily MORTON knew his medical shortcomings and had asked BIGELOW to be present, who happened to observe that over-stimulation had resulted in circulatory exhaustion, and observed it in time. In 1846 MORTON obtained permission to demonstrate "Letheon" in the Massachusetts General Hospital, and WARREN removed a venous tumour. Other equally successful demonstrations took place, and the world acclaimed "Letheon," alias sulphuric ether, to be a success. No one would willingly depreciate the credit due to MORTON for his perseverance and courage. His position as a person knowing practically nothing of the scientific side of anæsthesia was none the less an easier one than was that of CRAWFORD LONG, for the former had brilliant surgeons to support him, while the latter, in a remote country township, was divorced from sympathetic professional brethren. The facts as we know them seem to support the thesis that CRAWFORD LONG, without external suggestion or support, elaborated the idea of ether anæsthesia and successfully practised it before anyone else; that HORACE WELLS initiated nitrous oxide anæsthesia two years later, but did not recognise that though his theory was correct his technique was so faulty as to be foredoomed to failure; that JACKSON passed on second-hand knowledge to MORTON, but had no part or lot in the practical application of that knowledge to produce anæsthesia; and lastly, that MORTON, although actually years behind the true discovery of anæsthesia, yet gave up his lucrative profession and applied the energies of his life to the promotion of what he regarded as his own discovery—ether anæsthesia. He possessed courage, resource; he experimented and he succeeded, having the backing of powerful friends.

Annotations.

"Ne quid nimis."

THE MENACE OF THE COAL STRIKE.

THE complete stoppage of the national coal-supply at its source has already become a terrible menace to the health as well as to the prosperity of the country. Business has been dislocated in a thousand quarters, and in many has definitely come to a standstill. Vast numbers of workers whose industry is bound up with the coal-supply, sometimes only in an indirect manner, are being thrown out of employ, or are labouring from day to day on short notice. Concurrently with this cessation of wages the price of food and fuel and of other necessaries is rising, and must continue to rise while the terrible position lasts. Not that the position can last much longer as it is; inevitably, unless relief comes, the approaching condition will be much worse than the present. Difficulties and delays in transport and production must soon lead not only to a general advance in prices, but to an actual shortage of supplies, and what this will mean to the sick and the young requires no exposition in a medical journal. The interference with the sanitary services and water-supplies of the community, to which we alluded a fortnight ago as forming the gravest threat to the health of the country, has already commenced, and those who know the possible gravity of the situation require all their calmness to wait silent day by day for the signs of a more reasonable and humane spirit among those responsible for our perilous plight. But that calmness must be maintained. Upon the sick, upon those who have the care of the sick, upon the over-worked, and upon the poorly paid, the mere tension engendered by the necessary self-control will have its evil effect, an effect that the statistics of mortality will assuredly reveal to us; but it is absolutely necessary that all who are rendered by more favourable circumstances strong enough to bear the strain should bear it calmly. Scurrilities against coal-miners and coal-owners, Premiers and Chancellors, Tories and Socialists, may temporarily relieve the ass who utters them, but they add to the anxieties of the ass who believes them. This is not the time for wild and whirling words: it is the time when those who feel that they can help their weaker brethren should take thought as to the most practical way in which their services can be rendered.

AN "APOCRYPHAL" MIRACLE EXPLAINED.

A CASE has recently been described in the Danish medical press[1] which, according to a correspondent, throws light on a miracle related in the Apocrypha. The patient was a man of 77, whose right lens was completely cataractous, but whose eye was otherwise normal. The cataract, which had existed for about eight years, had not been operated upon, as it did not interfere with the patient's work as a road-mender and as the sight of the other eye was excellent. While at work in his garden one day the patient had occasion to rub his right eye several times on account of sweat which had trickled into it. He awoke next morning to find that the sight of his right eye was restored; his wife and neighbours also remarked that his eye no longer looked grey. On examination by a doctor five days later nothing was to be seen of the lens till the patient looked down, when it was seen as a grey, shining body floating in the vitreous humour at the bottom of the eye, where it moved with the movements of the eye. On certain movements of the eyeball the lens appeared covering half the pupil, but it quickly slipped back into its former position at the bottom of the eye. The capsule of the lens was nowhere to be seen, nor was the eye painful or tender on pressure. The vision of the patient's right eye gradually improved, and during an observation period of over a year no inflammatory reaction or increase of the intraocular pressure occurred. The miracle related in the Apocrypha happened, of course, to Tobit, who slept with his eyes open in the courtyard of his house. A passing swallow discharged its fæces into his eyes, both of which became covered by a white membrane. His physician could do nothing for him, but his son, called Tobias, meeting the angel Raphael, was conducted by him to the river Tigris, where he caught a large fish the gall-bladder of which he was told to open. The bile was dripped into the father's eyes, when the covering membranes fell off, after the patient had rubbed his eyes violently. Professor Greef in his account of this miracle as portrayed by Rembrandt, suggests that Tobit must have suffered from a pterygium, as this is a common condition in the East, and as the disappearance of a white membrane is mentioned. He negatives the possibility of the condition being due to cataract, which cannot, he states, be cured

[1] Jespersen, Hospitalstidende, Dec. 3rd, 1911. Lundsgaard, ibid., Dec. 20th, 1911.

by external manipulation. The painting by Rembrandt in Brussels depicts the young Tobias performing an operation for cataract on his father. In the Lutheran translation of this miracle the word leucoma is freely translated as cataract, which is retained in the Dutch Bible of to-day. Greef's hypothesis is the less credible, as it is highly improbable that bile rubbed into the eye could remove a pterygium, whereas it is conceivable that old Tobit rubbed his eye vigorously after the instillation of bile, and that he thereby dislocated his lens. If this be the correct interpretation, Rembrandt's painting is at fault only with regard to the cataract needle held by Tobias. The painting is the best portrayal of an operation for cataract which has hitherto been made, and Rembrandt was presumably assisted by v. Meekren, an old pupil of Tulp, whose views as to the impossibility of curing cataract by external manipulations probably coincided with those of Greef. According to yet another theory Tobit suffered from a serpiginous ulcer of the cornea which is treated to this day with the instillation of bile. But such a cure cannot have been so spontaneous and rapid as the restoration of sight by the dislocation of the lens which, as the above case shows, may occur with that suddenness which is one of the essential features of a miracle.

THE PROBLEM OF THE DIPHTHERIA CARRIER.

THE importance of the apparently healthy carrier of infective organisms in regard to the spread of many specific infectious diseases has become increasingly apparent since attention was first drawn to the question in the case of enteric fever. The recognition of this factor in their spread has opened out a new field of work in the prophylaxis of some of these diseases. In none is the problem of greater importance than in the case of diphtheria, and the difficulties in the way of dealing with the carrier of the bacillus of this disease render any careful study of this question noteworthy. We have received a monograph entitled "A Study in Epidemiology illustrated by a Diphtheria Epidemic," privately published by Dr. Angus Graham Macdonald, in which, among other matters, this question of carrier cases is considered in some detail, and in which a scheme is suggested for endeavouring to deal with it. The basis of his observations is afforded by a careful study of an epidemic of this disease occurring in Crewe during the months from March to August, 1910.[1] Ninety carrier cases were isolated in association with 157 cases notified. The contacts were divided into home and school contacts, and there were 534 of the former yielding 62 positive cases or carriers, and 644 of the latter with 28 carriers. In addition 774 bacteriological examinations for release from quarantine were carried out, yielding a total of 2326 examinations. All school-carriers were found to be intimately associated at play with other cases and with carriers, but mere class-room proximity was found to be of little importance as a factor in spreading the disease. The evidence also goes to show that very intimate means are necessary for the transmission of diphtheria from one individual to another—a point which Dr. Macdonald regards as of great importance in indicating how readily the dissemination of the disease may be prevented by prompt bacteriological examination and detection of positive contacts or carriers. These carriers are divided by the writer into four definite groups—first, those who show no clinical evidence of diphtheria in whom the bacillus is found for a short time; second, cases in which there is a history of "cold" or "sore-throat" some time previously, these being probably neglected cases of diphtheria. The third group comprises patients without clinical history of diphtheria, but presenting some local lesion in the throat, nose, skin, or ear, in which the diphtheria bacillus finds lodgment, the commonest example being membranous rhinitis. The fourth group is made up by patients who have passed through a definite attack of diphtheria, and in whom the bacillus remains for lengthy periods after convalescence. The fate of the bacillus when it disappears is not obvious. There is no evidence of phagocytosis, and the suggestion offered as the most probable explanation is that it disappears as a result of the growth of some other organism. The administration of antitoxin appears not to influence the existence of the organism either in case or carrier. Dr. Macdonald sums up his observations upon carriers in a series of statements, among which we may mention that the length of carrier-life of the bacillus appears to have no effect upon its virulence, since the organism has been proved to be virulent after four and eight months in the ear and nose. He maintains that the control of diphtheria depends on the control of the carrier as well as of the case, and he urges that the carrier should be notified, no matter of what age or sex, and that due quarantine and observation should be maintained until satisfactory disappearance of the bacillus. He believes that a determined attack on the disease on the lines of thorough bacteriological investigation should have no difficulty in stamping out diphtheria altogether. He claims that the distribution of the disease which persists endemically is due to undiscovered carriers, and that epidemicity depends entirely on the number and nature of the carriers. After a critical examination of all the facts collected in relation to the particular epidemic investigated, Dr. Macdonald outlines his scheme for dealing with the disease. It affirms that a bacteriologist should be an essential member of the public health staff. He recommends isolation in a case as early as possible after notification and adequate disinfection. In the investigation of each case he advises a thorough inquiry into the history of the patient and into his environment, and urges that swabs should be taken from the patient, from all home contacts, and from as many outside contacts as possible. Until bacteriological reports are obtained all contacts are to be isolated. All contacts found to be positive are to be treated as cases of diphtheria. Dr. Macdonald's monograph is a thoughtful and suggestive study of a complex problem, and deserves to be carefully considered as a practical contribution to the study of preventive medicine.

[1] THE LANCET, March 25th, 1911, p. 795.

THE STUDY OF TROPICAL DISEASES.

A MEETING was held on Wednesday, Feb. 28th, at the Mansion House, by permission of Sir Thomas Crosby, M.D., the Lord Mayor of London, in support of the London School of Tropical Medicine, when Mr. Lewis Harcourt, the Secretary of State for the Colonies, delivered an impressive appeal for the public support of the school. He detailed the vast and valuable work which had been done in our far-off dependencies to mitigate the ravages of tropical diseases, or to discover and eliminate their causes, and claimed on good grounds that the keepers of the national purse had not been niggardly in their contributions to the work. A few days later H.S.H. Prince Louis of Battenberg, taking the chair at the annual dinner of the London School of Clinical Medicine, supplied additional arguments for public digestion why the people of this country should endeavour to support, and support profusely, the grand medical work now being done throughout the borders of our vast Empire. The medical services, Naval, Military, and Colonial, are now collaborating with

private workers and scientific missionaries from our universities and schools of tropical medicine in a manner that bears new fruit every day. The movement is the direct adjuvant to our rule as an Empire; for only by subjection of the inimical forces of disease can we as a nation come into full enjoyment of much territory that bears our name on the atlas, or discharge our duty as a superior race to those whom we have invited to depend upon us. Medical men have sacrificed their lives for this cause; the way for the public to make such sacrifices unnecessary is to facilitate the great object which medical men and sanitarians have in view, and support the multifarious movements now taking place to wipe out disease in our tropical possessions.

THE PAY OF THE PUBLIC ANALYST.

THE remuneration of the public analyst has seldom been upon a scale consistent with the training, skill, and experience which are required of him, but now that the practice of adulteration is becoming such a refinement, requiring a very elaborate series of operations for its detection, the scale of fees in many instances is wholly inadequate. There can be little doubt that modern methods of adulteration are often the product of a subtle scientific mind which discreditably turns its attention to the possibilities of eluding the control over the purity and quality of food, drugs, and drink provided by the Sale of Food and Drugs Acts. No analyst nowadays, if he is an honest man, dare certify that a sample, say, of butter is genuine without determining not only the amount of butter fat present, but the nature of the fat also, a process which involves considerable skill and attention. Then he will estimate the amount of water, curd, salt, and will search for preservatives, of which there are so many, and when found he will be bound to estimate the quantity in order to be able to say whether that is permissible. He is expected to do all this for, say, 10*s.* 6*d.* It may be urged that some compensation is arrived at because other samples which come before him may include substances which give very little trouble so far as their analysis is concerned. Accepting that for a moment, we doubt then whether the average fee for analysis is a fair remuneration for the high qualifications now required for the post. The days when 10*s.* 6*d.* was an ample reward for casting a specimen of suspect coffee upon the surface of water and noting whether some of the particles rapidly sank, colouring the water on their downward way, which meant the presence of chicory, are gone. The public analyst's work now is work of the highest scientific order; it must be done by a competent and conscientious man, otherwise the administration of the food laws must soon fall into disrepute. Slovenly practice must be impossible if discredit of the public analytical service is to be prevented. And there should be no temptation in the shape of totally inadequate pay to shirk the carrying out of a duty in a thorough and effective manner. The machinery which guards the purity and quality of our food-supply must be efficient, and it is impossible to purchase efficiency at rates which are so low as to give no recompense for training, skill, and responsibility. Only recently advertisements have come to our notice which invite qualified analysts to apply for a post which involves the analysis of 800 samples of foods and drugs per annum, and the remuneration offered is an annual sum of £150. In another instance the analyst is required to provide and maintain a laboratory himself, together with apparatus, chemicals, and assistance "as are necessary to enable him *adequately* and *completely* to execute the duties of the office." (The italics are ours.) The work means examining and reporting upon 2000 samples, formal and informal, per year and the remuneration offered is £500. The "informal" samples might mean the performance of some very elaborate analyses indeed, which at 10*s.* per analysis could not possibly meet the expenses of the "apparatus, chemicals, and assistance" laid down in the advertisement. The living wage is left entirely out of the proposition, and such a policy must sooner or later bring discredit upon a very important department of public service.

SUCCESSFUL ARTERIOTOMY FOR EMBOLISM OF THE FEMORAL ARTERY IN A CASE OF MITRAL STENOSIS.

THE recent operation of arteriotomy for embolism has not given the results which the remarkable experimental researches of Carrel led us to anticipate. Probably this is due to the fact that most of the operations have been done on aged subjects with diseased arteries containing long adherent clots. At a recent meeting of the Société de Chirurgie M. F. Lejars, commenting on the failure of the operation in one case, suggested that better results might be obtained in young subjects whose arteries were sound. At a meeting of the Académie de Médecine on Dec. 19th last M. Mosny and M. Dumont reported the following case in which this proved true, and fatal gangrene of the lower limb was prevented. A man, aged 38 years, was admitted into the Saint-Antoine Hospital suffering from cardiac dyspnœa. The heart was dilated and extended two fingers' breadth to the right of the sternum, the apex beat was in the anterior axillary line, the left auricle was manifestly dilated, and there was a presystolic thrill, but auscultation did not reveal any particular valvular lesion. The heart's action was very rapid and irregular. The liver was only slightly enlarged, and there was no dropsy or albuminuria. The patient gave a history of dyspnœa on exertion since childhood. Under rest and digitalis he improved, and a typical double mitral murmur could then be heard. The heart diminished in size and the arterial tension rose, but the pulse was still irregular. One morning, at 6 o'clock, when he was getting up for the tenth time since his admission, he felt a severe pain in the left calf, which he compared to an intense cramp. This rendered the whole limb powerless. When seen three hours later there were manifest signs of femoral embolism. The foot and leg, but not the thigh, were cyanosed, livid, and "marbled" in places, particularly on the great toe, by whitish completely ischæmic patches. The limb was cold as high as a well-marked limit four fingers' breadth above the patella. Sensibility was abolished up to the knee and movements of the foot and leg were impossible. No arterial pulsation could be felt in the limb except in the femoral artery in the upper part of Scarpa's triangle, Examination of the artery did not reveal any pain. Embolism in the upper third of the femoral artery, probably at its bifurcation, was diagnosed, and immediate operation was decided upon. Six hours after the onset of symptoms, under local novocaine anæsthesia, M. Georges Labey laid bare the artery in its upper third and incised it where it did not pulsate, and sensation of resistance showed the presence of a foreign body. The vessel was opened for a distance of one centimetre, and by compression a bifurcated clot extending from the common femoral into the superficial and deep femoral arteries was removed. The artery was sutured and the blood current was re-established. The operation, which took only a few minutes, was well borne. The limb was warmed by hot-air douches. Two hours after the operation the limb was warm and the cyanosis was diminishing. On the following morning the limb had regained its normal appearance, sensibility and motility had returned, and the popliteal artery pulsated. Thirty-six hours after the operation pulsation was distinct in the posterior tibial. At the time of the report (a month after the operation) the good result was maintained and the limb was quite sound, but the

patient was confined to bed by the condition of his heart which was dilated and irregular in action. M. Labey is to be congratulated on this remarkable success, but M. Mosny has gone too far in claiming this as the first successful case. In 1909 Dr. J. B. Murphy, of Chicago, in another case of mitral stenosis successfully removed an embolus from the common iliac artery, restoring the circulation.[1] This was a very daring operation in which it was necessary to catheterise the abdominal aorta and remove clot from it. The patient did not come under treatment until four days after an embolus was arrested at the bifurcation of the aorta; the limb was undergoing dry gangrene, and a line of demarcation had formed four inches below Poupart's ligament. Such complete success as in the preceding case was therefore impossible. Pulsation returned throughout the femoral artery, and amputation was performed at a lower level than would otherwise have been possible. Another and simpler method of treating arterial embolism has been used with success by French practitioners. It consists in breaking up the clot by massage *(pétrissage)* into small particles which are carried by the circulation to smaller arteries where a collateral circulation can be established, and they are no longer a source of danger. We reported a case of femoral embolism from mitral disease in which this was successfully done by M. Paul Claisse.[2] It is curious that this eminently rational and simple procedure has been overlooked, and the same treatment for arterial as for venous obstruction—rest—is recommended in the text-books. But this treatment could not have been adopted in the case now reported, because for success it must be adopted immediately after the embolism occurs.

FEBRUARY AT HOME AND ABROAD.

THE intense cold early in the month occurred when the barometer was low, a circumstance not usual in this country. Very severe frost sometimes happens with a low barometer, but it is generally quite transient, rarely continuing for more than 24 hours. But in the present case, although the glass was low, the pressure distribution was favourable for winds from some point between north and east, and the cold was, to a large extent, brought to these islands by the flow of air from those quarters. No sooner did the relative positions of the highest and lowest barometric pressure areas allow the air to flow from the south-east and south than the temperature rose rapidly to above freezing point, and as throughout the remainder of the month there was a continuous flow of air from between south and south-west the thermometer remained very high for the time of year, with the result that, in spite of the almost Arctic cold of the early days, the mean temperature was far in excess of the average for February. Very soon after the month began the frost became so severe that there are few occasions during the past 20 years which can furnish a parallel. The lowest thermometrical reading of the sheltered instrument in these islands appears to have been 4° above zero at Balmoral, but on the grass or snow the exposed thermometer sank to a few degrees below zero in several parts of the kingdom. At Norwich there was a reading of 3° below. Later in the month the thermometer rose to 50° and above with uncommon frequency for February, and on several occasions ascended to above 55° in the south and south-west of England, while the high figure of 60° was recorded at Great Yarmouth and at Birr in central Ireland. In the metropolis the mean temperature of the month was about 4° above the average. At Westminster and Greenwich the mean of the maximum readings was 49°, and at Kew and Hampstead 47°, while the mean of the minima was 38° at Kew, Greenwich, and Hampstead, and 40° at Westminster. These figures prove that as usual the central parts of London were appreciably milder than the outlying suburbs. Both at Greenwich and Westminster the thermometer rose to 50° or above on 19 afternoons, at Kew on 15, and at Hampstead on only 12. Comparatively few days were quite rainless, but the aggregate amount of the fall was not very much in excess of the average. The largest total was 1·76 inches at Hampstead and the smallest 1·39 inches at Kew. Over the country as a whole the rainfall exceeded the average and the sunshine was in default. In the southern and south-western counties of England this year has, so far, been very dull. In the metropolis last month there were 14 hours of bright sunshine in the City, 26 hours at Westminster, 27 at Hampstead, 35 at Kew, and 38 at Greenwich. Along the south and south-west coasts the figure, although much higher, was still below the normal, and on several days the sun was not seen at all. In the southern regions of Europe the earlier days of the month were more or less rainy, especially on the Riviera and in Spain. At Nice rain fell very frequently during the first nine days and yielded a total of 5 inches. Subsequently, however, the Riviera enjoyed the bright and warm sunshine generally associated with that favoured region. At Nice the mean afternoon warmth was 55° and that of the night 41°. This is rather warmer than the warmest part of this country, but at Biarritz the weather was more spring-like still, the mean maximum temperature being 61° and the mean minimum 46°. On no less than 17 days the thermometer in the shade rose to 60° or above, and occasionally touched 70°, while on the 28th it recorded the summer figure of 77°. Biarritz and its vicinity was, in fact, much warmer than and generally as bright as the Riviera and experienced less rain. At Paris the sunshine amounted to as many as 71 hours, nearly three times that at Westminster, and the mean maximum temperature equalled 51½°. The nights were, however, colder than in London, the mean minimum temperature being 37°. In Central Europe the frost of the early part of the month was more intense and continued longer than in these islands. Readings below zero Fahrenheit were common, while the maximum warmth of the days was below 20°. In Germany the lowest minimum appears to have been 9° below zero Fahrenheit at Munich.

HYPERTRICHOSIS AND SPINA BIFIDA OCCULTA.

IN the last number of the *Deutsche Zeitschrift für Nervenheilkunde* is an article by Dr. Erich Ebstein, of the Medical Clinic in Leipzig, on the occurrence of hypertrichosis in association with spina bifida occulta. The first of the two cases he describes was that of a young woman, aged 16, suffering from chlorosis. On examination it was found that over an area of the back corresponding to the third, fourth, and fifth lumbar vertebræ there was a lozenge- or diamond-shaped patch of long fair hair, which had been present since birth, and had often been cut. There was no abnormal pigmentation of the skin. No central nervous system symptoms were to be found. An X ray photograph, however, showed that the spinous processes of the first and second lumbar vertebræ were definitely bifid, while that of the third was displaced a little to one side. The second case concerned another young woman, aged 22, suffering from acute rheumatism. On examination there was found in the middle-line of the back, over the second dorsal vertebra, a patch of rather long dark hair. There was no reason to suppose that the condition had not existed from birth, though the patient was unable to give any account of it. No symptoms referable to the central nervous system were present. In this instance the radiographic picture was of considerable interest. The cervical spinal column, the ninth and remaining dorsal

[1] See THE LANCET, July 17th, 1909, p. 165.
[2] THE LANCET, Sept. 24th, 1910, p. 962.

vertebræ below, and the lumbar were all normal. The sacral canal, however, was patent in the lower three sacral vertebræ—an anomaly that has occasionally been noted in association with spina bifida occulta. In the dorsal vertebræ above the ninth there were noteworthy alterations. The intervertebral discs could not be clearly made out; the bodies of the vertebræ appeared to have ossified together, so that one could with difficulty be distinguished from another. The third to the eighth ribs, inclusive, on both sides, were unusually small and unusually close together. The spinous processes of these vertebræ could not be distinguished, while the transverse processes, specially on the right side, were remarkably thick. The first dorsal vertebra was considerably deformed. A number of cases of hypertrichosis and spina bifida occulta have been described. The anomaly must date back to an early period in intra-uterine life. In such cases radiographic examination furnishes indispensable aid. Not a few of the "freaks" who have at one time or another been exhibited in public have been cases belonging to this category. Dr. Ebstein refers to "the lady with the horse's mane," a Miss Bell Carter, of Kentucky, in whom an overgrowth of hair between the shoulders was associated with bifidity or rather incomplete union of the spinous processes of the second and third dorsal vertebræ. The reader who may be interested will find other instances in Gould and Pyle's "Curiosities of Medicine." One of the most curious cases of this kind, of which Dr. Ebstein appears to be unaware, was recorded by Sir William Gowers in the *Medico-Chirurgical Transactions*, Vol. XC., 1908. In his case the patient was a man, aged 41, with a unilateral growth of long hair over the cervical region, just to the right of the middle line. The area was triangular, its base corresponding to the middle line of the back. With this was associated motor paralysis of the right arm, and some analgesia corresponding in part to roots from the fourth cervical to the second dorsal. The diagnosis which Sir William Gowers made of congenital syringomyelia seems amply justified. There is no record, however, of an X ray examination in this instance. No imperfection of the cervical arches and spines could be felt.

THE OPTICAL CONVENTION.

THE scheme for holding an Optical Convention, which was launched a few months ago under the auspices of a privately formed committee, has now assumed something of a public character by the issue of a definite programme of work for the convention and a scheme for the bringing together of an exhibition of optical and allied instruments in June next. The promoters of this undertaking have received very strong support from the scientific world, and we observe with interest that an application which they made to the Board of Education for housing space for their exhibition received the support, among other distinguished men, of the President of the Royal Society, the President of the Royal Institution, the Astronomer Royal, and Lord Justice Fletcher Moulton. The Board of Education has acceded to this request, and the exhibition will be held in space to be provided in the buildings of the Science Museum at South Kensington. The committee, taking advantage of the powerful support which it has thus secured, is proposing to make an interesting new departure in connexion with the exhibition. It proposes to circularise the users of optical instruments throughout the United Kingdom, through the medium of the various scientific societies, with a view of promoting improvements in the design and manufacture of the optical instruments in present use. The scheme, as set out in a report now being circulated by the committee, is to obtain comments in the form of criticisms and suggestions from all and sundry whose practical working with such instruments enables them to contribute to the discussion on these points. The material so collected is to be submitted to a small and very highly qualified committee, who will consider, elaborate, and make public in the form of a report the substantial results of this inquiry. The scheme is an ambitious one and, so far as we are aware, represents an attempt at systematic coöperation between the men of science and the manufacturers in a mode and on a scale quite without precedent. It is difficult to say what may not be accomplished by this committee with the effective countenance of the Government on the one hand and of the leaders of scientific thought on the other hand. In the case of a body with less resources we should have thought the plan somewhat over bold, but the circumstances of the case make it reasonable to expect for the present committee success in its undertaking.

RUPTURE OF THE COMMON BILE-DUCT.

IN the *Australasian Medical Gazette* of Jan. 20th Dr. Owen F. Paget has reported a very rare result of being run over—rupture of the common bile-duct. A boy, aged 7 years, was run over by a "sulky" on March 14th, the wheel passing from the right anterior iliac spine towards the liver. When seen on April 4th he was jaundiced and emaciated. The abdomen was full of fluid, the respiration was embarrassed, and the temperature was normal. There was no bile in the stools. Aspiration was performed and three quarts of aseptic bile were removed from the abdomen. The temperature shot up to 103° F., but returned to normal in 24 hours. On April 8th the abdomen was opened by the usual vertical incision for bile-duct operations. The liver appeared to have been torn from its suspensory ligament and rotated forwards, its superior surface becoming anterior. Its anterior edge was flattened out like ribbon and was adherent to the transverse colon. The gall-bladder was adrift from the liver and hung by its duct. Bile was found to leak from a point in the common bile duct at the hepato-duodenal ligament. During attempts to dissect out the duct the patient's condition became so serious that the operation had to be finished. A large rubber tube containing gauze was therefore passed down to the region of the tear, and the abdomen was closed. The gall-bladder was attached by a suture to the liver so that it could easily be found at a second operation. From 10 to 12 ounces of bile were passed through the drainage tube in 24 hours, while none appeared in the stools. Thus a difficult problem had to be faced. A very emaciated child, with a pulse of 130, required a delicate operation—suture of the common bile duct or anastomosis of its proximal end into the duodenum. The severed ends had probably widely retracted. It was decided, if possible, to suture or anastomose the duct, and if not, to short-circuit the gall-bladder into the colon, by which it was thought that half the bile would enter the colon and that thus the alarming emaciation might be combated and the strength increased so that the tear could be sutured by a later operation. On April 26th a second operation was performed. The liver was found to have regained its normal position and was adherent to the diaphragm. The gall-bladder had again gone adrift and could not be found and there were many adhesions from drainage tracts. The gall-bladder was ultimately found adherent to the posterior surface of the liver. It was sutured to the colon and the abdomen was closed, a drainage-tube being inserted. The patient was removed from the table barely alive. No bile discharged into the intestine and that discharging through the wound became fœtid. The child appeared to be dying. The drainage-tube was removed and the sinus allowed to close with the idea that by increasing

the resistance to the escape of bile it might be made to flow into the intestine through the gall-bladder. On May 7th there were severe pains in the upper abdomen apparently due to peritonitis, and on the 8th the motions were coloured brown. Three days later the presence of bile was proved chemically. A week later no bile appeared in the wound and the colour of the motions was normal. The temperature varied from 101° F. to normal. Recovery ensued.

THE SURGERY OF THORACIC WOUNDS IMPLICATING THE DIAPHRAGM.

AT a meeting of the Société de Chirurgiens de Paris on Feb. 2nd, reported in the *Presse Médicale* of Feb. 14th, an account was given of a surgical feat which reflected great credit on the surgeon responsible for it, M. Lepoutre, of Lille. The case was one of thoracic injury; projecting from an open wound in the wall of the chest there was a loop of intestine which was perforated. M. Lepoutre repaired the intestinal lesion, cleaned the external parts, and attempted to return the loop of bowel to the abdominal cavity, but was prevented by the fact that it was firmly gripped by the edges of the diaphragmatic wound through which it had escaped. He opened the abdomen instead of enlarging the thoracic wound so as to assure himself of the condition of the organs beneath the diaphragm. He found these intact and sewed up the wound in the diaphragm, which was 4 cm. in length. The abdomen was drained, but the pleural wound was closed. The patient recovered. M. Rigollot-Simonnot, who reported the case on behalf of M. Lepoutre, gave an interesting review of the different operations which might be used in such cases, with the indications for each. In his opinion immediate laparotomy is indicated only in cases of gunshot wound of the thorax implicating the upper abdomen, in abdominal injuries involving the thorax from below upwards, and in cases displaying unmistakable evidence of abdominal complications. In other cases he favours the thoracic route of approach to the diaphragmatic wound. Drainage should be avoided as far as possible, and should never be applied to the pleural sac; if the thoracic route has been adopted the drainage should be carried out through the diaphragm but external to the pleural sac. He considers that in the immense majority of cases in which immediate thoracotomy has been performed a secondary laparotomy will be necessary, especially when the injury has been on the left side of the chest.

(1) THE EFFECTS OF CAFFEINE UPON THE GERMINATION AND GROWTH OF SEEDS; (2) THE PROTEINS OF RICE.

THE February number of the *Bio-Chemical Journal* contains two papers under the above headings in which the respective writers make some interesting observations. (1) Dr. Fred. Ransom finds that caffeine delays the germination of seeds to a marked extent. Although the list of seeds tested was comparatively short, the results he regards are so uniform that they can hardly be attributed to chance. In every case except one (nasturtium) the seeds which had been treated with caffeine were later in germinating than the tap-water controls, and in a great majority of cases fewer seeds germinated in the caffeine groups. In the course of growth the caffeine-treated seeds were at first relatively less vigorous than those from tap-water, and in many cases they remained so till the end of the experiment. In three caffeine groups no seeds germinated. In no instance except the nasturtium had the caffeine groups any advantage over the controls. Having regard to the fact that caffeine in dilute solution applied to muscle increases the response to stimulation it might be expected to stimulate germination and growth. On the contrary, Dr. Ransom's experiments show that caffeine in a 1 per cent. solution retards or even prevents the germination and growth of seeds, and so far there is no evidence to show therefore that caffeine, either alone or in combination with other substances, can act as a stimulant to plant life. The investigation is an interesting one in view of the occurrence of the alkaloid in certain plants, and we are glad to note that it is being continued. 2. In the second paper the notes of Mr. S. Kajiura's investigation on the proteins of rice are given. A knowledge of the composition of the proteins of rice is obviously important from an economic and hygienic point of view, especially in relation to beri-beri. It was found that the proteins of "white rice," as used for dietary purposes in Japan, consist only to the smallest extent of albumins and globulins. The amount of alcohol-soluble protein is practically negligible, an observation which distinguishes rice sharply from all other cereals hitherto investigated. The main protein of rice (oryzenin) belongs to the glutelin class—that is, proteins soluble in weak alkali. In its nitrogen cleavage it differs from wheat glutenin (the only other glutelin so far studied) very considerably. The results are suggestive, and will no doubt stimulate further work on this important subject.

Sir Anthony A. Bowlby, Surgeon-General Sir Arthur M. Branfoot, Sir James Kingston Fowler, Mr. George H. Makins, C.B., Dr. H. D. Rolleston, Mr. Charters J. Symonds, and Dr. James Taylor have been appointed to the consulting staff of the Convalescent Home for Officers at Osborne, Isle of Wight.

THE Council of the Royal Society has recommended for the Fellowship, among others, Professor Benjamin Moore, Mr. Edward Nettleship, Professor Robert Newstead, and Dr. William McDougall, all of whom have assisted by their scientific work in the direct progress of medicine.

THE King has conferred the honour of Knighthood upon Mr. W. M. A. Anderson, M.V.O., M.B. Durh., who as honorary surgeon to the Princess Royal was summoned to Egypt to attend to the late Duke of Fife.

WE regret to be compelled to delay publication this week of our report of the adjourned joint debate of the Medical, Surgical, and Anæsthetics Sections of the Royal Society of Medicine on Thyroidectomy.

THE King has appointed Mr. William Joseph Essery, M.B. Durh., M.R.C.S. Eng., to be a Commander of the Royal Victorian Order.

IT is in contemplation that a life of Lord Lister should be prepared. Any letters of scientific interest forwarded to Mr. R. J. Godlee, 19, Wimpole-street, London, W., will be gratefully received, and returned after copying if desired.

Dr. StClair Thomson has been unanimously elected a Corresponding Member of the Wiener Laryngologische Gesellschaft.

MANCHESTER UNIVERSITY SETTLEMENT.—A conference will be held at the Settlement, Ancoats Hall, Every-street, on Thursday, March 21st, at 7.30 P.M., on School Clinics, when papers will be read by Dr. Lewis A. Williams, medical superintendent of the Bradford education committee, and Mr. William H. Jones, the borough dentist at Cambridge. The papers will be followed by discussion.

THE PROBLEM OF AFTER-CARE OF SANATORIUM PATIENTS.[1]

BY T. D. LISTER, M.D. LOND., M.R.C.P. LOND., F.R.C.S. ENG.,

PHYSICIAN TO THE MOUNT VERNON HOSPITAL FOR DISEASES OF THE CHEST, AND ADVISORY PHYSICIAN TO THE NATIONAL SANATORIUM ASSOCIATION.

THE treatment of consumption is a costly matter. It is only the still greater cost to the community of the disease itself that justifies the many ways of spending money on treatment that have their several advocates. Among these the sanatorium has the pre-eminence of being the most costly, and of having the greatest number of skilled supporters. The sanatorium has come to stay, whatever the advocates of other methods may say in its disparagement, or as to the advantages of their own schemes in comparison. It is not necessary here to enter, save incidentally, into the question of the relative value of the alternatives to the sanatorium. Wherever tuberculosis is being fought sanatoriums are established. The sanatorium is recognised as an essential link in the chain of measures which the hygienists of all civilised countries are beginning to adopt. I say beginning, because as yet we are but at the threshold of the struggle. For the causes of the disease are still scientifically unknown.

The Problem of Relative Immunity.

We know certain things. We dogmatise upon them. But our dogmas are open to all forms of criticism. It is needless for me to tell you that the discovery which placed Koch among the immortals is the basis of all our present-day work. The tubercle bacillus is the infective agent, and all cases of consumption are due to the invasion of the body by this microbe. We recognise certain conditions of the body which render it vulnerable, some inherited—this for the eugenists—and some acquired—this for the immunists and sociologists.

But what is this vulnerability? Why is A apparently resistant to the ubiquitous infection and B an easy prey? In what essential qualities do their bodies differ? In what lies the difference between the tissues of the patient who dies in a few weeks from "galloping consumption" even when surrounded by everything that should make the onslaught of the bacillus difficult, and those of the patient badly fed and housed who goes on for 10 or 20 years fighting an indecisive battle, but able all the time to earn a living? Why is there every degree of ability to "stand" a dose of infection?

It is this very difficult question of relative immunity, full of all the problems of pathology, that leaves us, and I fear will leave us for years to come, in no position to answer it. The real answer might give us the clue to the real treatment.

What is being Done?

Meanwhile, what are we doing? We are taking refuge in the teachings of hygiene. We know that certain conditions of living, to which the sanatorium presents the antithesis, are associated with a high rate of attack by consumption of those who live under them.

We say, let us give to as many as possible of these those hygienic conditions they have lacked. Let us adopt the political maxim, "The greatest good of the greatest number," and apply it to the attempt to cure consumption.

I have no delusions as to the statistics of sanatorium results. We have, as has been pointed out, no strictly comparable figures of the results of sanatorium treatment and of non-sanatorium treatment. What has been said of sanatoriums is, to my mind, equally true of other methods of treatment, but I will not venture to go into that.

Teachings of Hygiene.

At present the hygienists of the world are agreed as to the conditions of living which produce liability to the disease. They are also agreed as to the value of the sanatorium in producing resistance to the disease.

The sanatorium, like consumption itself, is a product of civilisation. For good, or for ill, we herd masses of our populations in cities and cage them in factories and tenements. Hygiene, by constant watchfulness, enables us to make the best of things according to the means at its disposal. So far as consumption is concerned, it points out the dangers of infection and the evils of dirt, overcrowding, overwork, under-feeding, drink, and heredity in encouraging infection. It says, if we could only take all the infectious cases away, and if we could destroy the conditions which encourage infection, we could stamp out this plague. Meanwhile, it says also, let us take the case that is as yet still only invaded, and not effectively occupied by the enemy, and give it healthy conditions. Let us supply those weapons of fresh air, cleanliness, sunlight, rest, food, exercise, and sobriety—which are known to be necessary for the body to beat back or surround, perhaps to destroy, the invader.

That the sanatorium does provide such weapons may be accepted. But the individual resistance of the patient—his relative immunity—is an unknown factor, and so statistical experts riddle the results of sanatorium treatment with criticism, while unable to tell us what better to do.

The Sanatorium a School of Hygienic Living.

I say let us be content with teaching the lessons of hygiene. Whether our results be 50 per cent., 60 per cent., or 80 per cent. of arrested cases is immaterial, so long as we train the ignorant dangerous consumptive into ways of safety.

Elsewhere, on another occasion, I have said that this battle against consumption is one of the problems of industrial disease.[2] I said that the sanatorium is only a link in the chain of measures necessary. But it is the one great object lesson in the prevention and treatment of consumption. It is the school of hygienic living for the consumptive. Since my attention was specially directed to tuberculosis I have always recognised this. For a paper, written jointly, and published some years ago in THE LANCET,[3] I suggested the title "A National School for Consumptives." The views that I then advocated, and have consistently insisted upon on the Council of the National Sanatorium Association and elsewhere, are now likely to be adopted as a State provision. The scheme of an industrial sanatorium that I drafted in 1903–1904, which has now been for five years successfully carried out at Benenden, was framed with educational objects in the forefront, as well as those of economy in construction and administration. So far as education goes a sanatorium is a necessity. We might as well say that the bulk of children can be taught as well at home as at school, as that the mass of consumptives can be treated as well at home as in an institution.

Limitations of the Sanatorium.

But I have always pointed out very clearly that the sanatorium has great limitations. It is not enough to "select early cases," as the phrase goes, to send them away to sanatoriums, to let them receive their training for as long as thought fit, and to send them back again "cured," as distinguished laymen hope, to all the evils from which we have only rescued them for a few short months. I pointed out that though much can be done by such methods, yet still more remains to be done, not only in the treatment but in the prevention of the disease, which includes the prevention of relapses. The far greater problem remains.

It may be easy to "cure" or to "arrest" certain early cases, if we select those who can "stand" a dose of infection fairly well. But who believes that any large proportion of such arrested cases will remain well without after-care? Does anyone believe that a person who has once lost that undefined quality of immunity to tuberculosis, and who has now apparently regained it by sanatorium methods—or any methods—is a better life for resisting a fresh attack than one who has never had the disease? Will any insurance office bet the average odds against the chance of such a person dying from consumption?

Combination of all Methods of Treatment Needed.

There is something—there are many things—we do not know about the pathology of the victims of tuberculosis, but one we do know is that the consumptive class is consumptive.

Of course, I am not ignoring the many sanatorium cases that stay well for years after leaving off treatment, nor the cases treated by tuberculin or any other method that do the same. But are not such cases originally resistant? Were not the symptoms which led to their treatment merely the evidence of a diminution of resistance due to some transient

[1] An address delivered during the exhibition at the Royal Sanitary Institute on Jan. 19th, 1912.

[2] "Industrial Tuberculosis," T. D. Lister. THE LANCET, Oct. 15th, 1910.

[3] Garland and Lister: THE LANCET, March 9th, 1907, p. 677.

disturbing cause? The infection is everywhere. So large a proportion of the general population has tuberculosis and are able to get well of it, as shown by many pathologists, that it is not surprising that many such cases pass through the hands of the sanatorium doctor or the physician who immunises by the direct administration of tuberculin. Their disease is only a ripple on the calm sea of health.

Such cases afford, I am convinced, a large number of our most successful results. In other words, the more solid the foundation of natural tolerance, or natural resistance, on which our treatment is superadded, the more lasting will be the superstructure of health.

You will, I trust, forgive me for having thus entered on debatable matters, but I have spoken with no desire to do aught than suggest one of the factors that I think should not be lost sight of in the after-care problem—namely, the relative immunity or resistance of individuals.

By "careful selection" of cases anyone can get good results in a large number of cases of infection by tubercle. But until "careful selection" can be replaced in our medical phraseology by something which leaves less to the personal view of the doctor who uses the term, we must rely for our treatment of consumption among the people on a combination of all the methods of all the doctors. Let us remember that patients are patients and not a row of bottles. We must not waste time and energy in disputes as to whose method is best, but use every method in turn for the cases it suits best.

Part Played by the Sanatorium.

No national system of insurance will enable us to detect latent tuberculosis in the enormous number of people who must have got it, and who are unconscious of it. It is even difficult in the present state of medical education to secure early diagnosis of many who apply for treatment for slight vague illness, as to their possibly being affected by active tuberculosis. Most of the cases admitted to sanatoriums are, and will continue to be, people who are really ill. People who are not ill will not apply.

Let us agree to-day that the sanatorium does, and will continue to do, its part in restoring some of these people to apparent health, and that it teaches many others the ways of health. Some of the first class will remain well for reasons I have stated, others will relapse and seek readmission, others will relapse and die. Some of the second class will learn their lesson so thoroughly that, aided by their own resistance, they will gradually progress to health, others will become chronic, others relapse, and others will die.

It is a pessimistic outlook for those who do not profit by the teaching of the sanatorium, or who are unable to practise after they leave what has been demonstrated and preached to them.

After the Patient Leaves the Sanatorium.

No sanatorium alone cures consumption. Much more is necessary than the three or four months of treatment in a sanatorium. If immunity in our most successful cases has for a time been lost, it has been lost with difficulty, and the foundation of natural resistance must be there or they would not be successful. Will it be regained easily? I think not. The hygienic conditions of sanatorium life will do good as long as they last. But for the permanent recovery of immunity the invaded territory must be again rendered untenable by the enemy.

After leaving the sanatorium the lessons it teaches must be taken into the home and the workshop, into the daily life and habits of the consumptive, for years to come. Sanatorium treatment is not merely putting patients in an open-air shelter, nor resting and exercising them against a temperature chart, nor stuffing them like pigs against a weight record, nor establishing a tolerance of tuberculin injections. These things it is the province of the physician in charge to effect. As a result the patient may leave the institution apparently well. But sanatorium treatment to be effective must have induced something else. It must have roused the patient to the fact that all this machinery of detail meant something vitally important to him—to him himself. He must leave determined to remain well; he must be inspired to imitate the sanatorium life as a necessity of his future existence, and the machinery for so doing must be set up.

This is the problem of the after-care of sanatorium patients—to inspire the patient and to give him guidance and help. How difficult it is for the vast mass of consumptives the increasing literature on the subject affords abundant proof. Every physician who studies this disease is faced by the problem every day. If it is difficult in the case of the patient discharged as "arrested," how much greater is the difficulty in the case of the patient who is discharged only on the way to health or worse.

The Social Problem.

The social problem involved is second only to the strictly medical problem. So well has the lesson of the infectivity of tuberculosis been taught, that the patient is often faced on his return to work by the aversion of his former colleagues. His employer may even be compelled to refuse to restore him, or a new employer to refuse to engage him, quite apart from the employer's risk of legal liabilities.

The public does not grasp the necessary qualifications of a scientific fact easily. The untrained infectious workman with chronic consumption, which does not in his opinion require treatment, is often tolerated while he distributes his spit everywhere, but the returned safe sanatorium patient is boycotted. Moreover, the working conditions under which the patient could previously earn a living may have been the very cause of the loss of resistance which led to his disease declaring itself.[4]

The Question of Change of Occupation.

Idealists have suggested the abandonment of the old life and the taking on of a new means of livelihood. Such a course is impossible for the great mass of consumptive workers. Not until England is again an agricultural country would this be possible here, and, as someone has truly said of "farm colonies," "You cannot make a consumptive clerk or drunken docker into an efficient agricultural labourer;" it is economically impossible.

Our overseas colonies have their various climatic advantages and disadvantages. But the colonies are not opening their arms to receive weaklings. The consumptive class is consumptive, and nobody wants them. Individual instances of brilliant recoveries under colonial conditions are familiar to us, but no protest can be too strongly worded against the loose prescription, "Take a voyage to Australia."

Changes of occupation from clerkship to land surveying, from indoor book-keeping to outdoor agency, and so forth are sometimes possible. But as a rule the patient whose resistance has apparently been restored by a stay in a sanatorium must depend upon himself, and continue in the same employment as before he broke down.

Unfavourable Cases.

For those who only just hold their own under sanatorium conditions a return to their employment means disaster. For those whose resistance was unequal to any attack, and who are gradually going down hill, after-care means the provision of an easy death-bed if possible.

The Government will have some better plan, let us hope, than the infirmary ward for the dying industrial consumptive. For those to whom ordinary city life is impossible provision should be made in model health villages or colonies, but they will be almost inevitably State pensioners. Afforestation schemes, farm colonies, outdoor official positions, and many other suggestions have been made for dealing with various groups of these cases, and we must do what we can for them—a phrase which often signifies our inability to do anything.

"Arrested" Cases.

But the case of the first class, the "arrested" case, is the one to which most attention as regards "after-care" is being paid. It was, no doubt, this class of case which was in the mind of the council when this exhibition was arranged. What is the position of the man who leaves the sanatorium labelled "arrested," "fit for work," "able to do a good day's work without any reaction"? *He is a person threatened by consumption* as much as he was before symptoms of illness led him to make his first appearance before a doctor—but he knows more. It is on his own personal enthusiasm and discretion, as well as upon the unknown factor of his natural resistance, that the permanence of his cure will depend. He can continue his treatment according to his opportunities. The backyard shelter, the canvas pavilion, the regular, sober life that he has learned to live—all the machinery of which he has acquired experience will be of use to him. But he is still threatened

[4] Loc. cit. ("Industrial Tuberculosis.")

with consumption. The tuberculosis dispensary, the tuberculin dispensary, the hospital, the infirmary, the farm colony, our overseas colonies, and the patient's backyard all have their place in the after-care problem. So we see that the after-care problem is not different from, but identical with, the problem of the prevention of consumption, with the one great difference that the patient is educated.

The Prevention of Consumption.

It is bad conditions massed under the term "environment" which produce loss of resistance, and infection which excites the disease. All our energies must be directed in the way of prevention. We cannot at present deal with the existing conditions of life among those most susceptible. Hygiene must be preached not only to those interested, but to those who are not interested. The health conscience of the people must be aroused or created.

As success in sanatorium treatment depends on the inspiration of the patient, so success in the prevention of consumption must depend upon the inspiration of the poorest and most ignorant classes of the people. Health teaching must find its way into our schools and homes. We must secure as wholesome a condition in the workshop, office, and dwelling as exists in the coal-mine or inspected factory. We must provide proper food and recreation, and implant a desire for higher ideals among the masses.

If we succeed in a campaign of prevention, the problem of after-care ceases to exist. It is this problem of prevention, which I say includes after-care, that is the real question for solution by the statesmen whose care is that of the public health.

CRAWFORD WILLIAMSON LONG, THE PIONEER OF ANÆSTHESIA.[1]

BY DUDLEY W. BUXTON, M.D., B.S., M.R.C.P.,
ANÆSTHETIST TO UNIVERSITY COLLEGE HOSPITAL AND LECTURER ON ANÆSTHETICS IN UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.

Crawford Williamson Long was the pioneer of anæsthesia and the first to suggest and employ ether inhalation during surgical operations. Although the discovery of anæsthetics has bestowed the greatest blessing upon suffering humanity its birth has been marked by much polemic and in some cases with scant recognition of those who have done so much for mankind. While disputants claiming for themselves, or their friends, the plaudits due to great discoverers have rent the welkin with their angry cries and clamoured for a material solatium, one man, Crawford Williamson Long, reputed to be actually the first to produce artificial anæsthesia by inhalation of ether, was content to stand aside, calm and dignified, as one who strove to benefit his race while seeking for himself neither guerdon nor worldly honour. I propose to submit to your consideration the facts which have been accumulated and which, to my mind, prove Long's right to the world's acknowledgment that he was the pioneer of anæsthesia.

Views on Possibility of Anæsthesia at the Time.

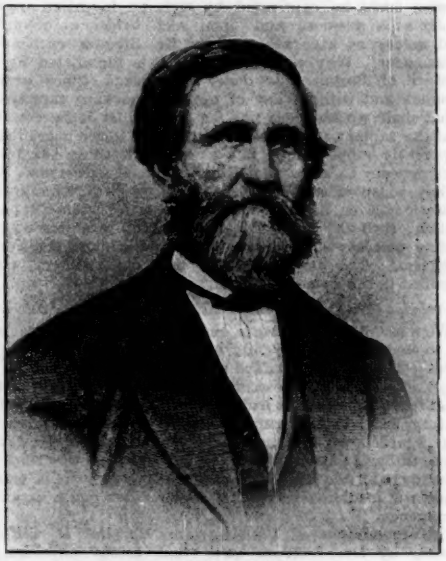
It is impossible to do justice to the man without making at least an attempt to understand the environment in which he worked, and to analyse the professional and public opinion at the time he lived concerning the possibility of anæsthesia. Even so late as 1846 Sir Benjamin Brodie wrote: "Physicians and surgeons have been looking in vain, from the days of Hippocrates down to the present time, for the means of allaying or preventing bodily pain." In his mind were, no doubt, the spongia somnifera of Theodoricus of Lucca, opium, cannabis indica, mandragora, and the whole gamut of nostrums vaunted through the centuries; the claims of Denis Papin, and of Cardan, whose magnet he averred could abrogate pain; the compression of the carotid arteries by Valverdi; nerve compression, suggested by Ambroise Paré and practised by James Moore, and subsequently by John Hunter in St. George's Hospital; Wardrop's (1832) bleeding to syncope, adopted by Richerand; and Mesmer's claims to dissociate the astral from the corporeal body. Many methods had been called, but, as the sequel will show, few had been chosen.

[1] A paper read before the Section of Anæsthetics, Royal Society of Medicine, Dec. 1st, 1911.

Some Biographical Details.

But what of the man himself? Crawford Williamson Long was born on Nov. 3rd, 1815, at Danielsberg, Georgia. (Fig. 1.) His people were of high intellectual and social standing; his grandfather, Captain Samuel Long, who had emigrated from Ireland, was a philanthropist and man of affairs, prominent in the war of his troublous times. Captain Long's wife was a Miss Williamson, of Ulster, and her maiden name was perpetuated in that of her grandson. Of Long's father we learn that he was high in the esteem of his fellow-countrymen and the intimate friend of W. H. Crawford, after whom he named the subject of this history. Crawford held important official posts, twice represented his country in France, and was a Secretary of State. Long's mother, although an invalid, by her literary gifts added culture to her home. Thus was Crawford Long brought up amidst

FIG. 1.



Crawford Williamson Long, M.D.

refined and public-spirited persons, an environment which could but make for those traits of character which in later life developed him into the best type of the man and of the physician.

A few words will suffice to tell the subsequent story. "Studious and wise beyond his years," Long, whose extreme youth when he went to college earned him the *sobriquet* of "The Baby," graduated brilliantly at Franklin College—now the University of Georgia—when but 19 years old. His chief friend and class-mate was Alexander H. Stephens, later to be elected Vice-President of the Southern Confederacy, and to him and Long have been erected monuments in Statuary Hall, Washington, the twain chosen by Georgia as the greatest men of her State. Thence he proceeded to the University of Pennsylvania, and at the age of 23 graduated in medicine. As was customary for those who could afford it, Long spent some time after this in walking the hospitals of New York. The suggestion made to him by his teachers, who recognised his peculiar merit as a surgeon, that he should attach himself to the medical service of the United States Navy, was discountenanced by Long's father, and at the latter's instance he settled as a general practitioner in Jefferson, Georgia, and commenced civil practice in 1841 at the age of 26.

Operations on Hypnotised Patients.

It should be remembered that it was in this same year that Braid, of Manchester, made his trial of the "neurhypnotic trance," and Esdaile in India successfully operated upon hynotised patients. Elliotson, who had migrated from St. Thomas's to University College Hospital, was then giving the full weight of his great mental power to

mesmerism, although his book on "Surgical Operations Performed in the Mesmeric State without Pain" was not published until 1843. There is no doubt that at the time of which we write mesmerism, or the hypnotic trance, was regarded as the accomplished fact of anæsthesia, and that in the United States many of the leading men in medicine and surgery accepted it as the long-hoped-for panacea whereby suffering humanity could pass unflinchingly through the ordeal of the surgeon's knife. In France, Richerand had tried it and pronounced for its value, and other surgeons scarcely less eminent were willing to swallow the doubtful reputation of Anton Mesmer so long as they could benefit their patients by employing methods which had been exploited by his fertile brain.

Inhalational anæsthesia thus started with a heavy handicap. In 1846, to anticipate, the editors of the *New Orleans Medical and Surgical Journal* wrote, *apropos* of ether inhalations: "That the leading surgeons of Boston could be captivated by such an invention as this under such auspices and upon such evidences of utility and safety as are presented by Dr. Bigelow excites our amazement. Why, mesmerism, which is repudiated by the *savants* of Boston, has done a thousand times greater wonders and without any of the dangers here threatened. What shall we see next?" *En passant*, let it be remarked that the sapient editors were condemned to see many things apparently unpalatable. But putting this aside, the quotation appears to show that the utility of mesmerism was widely accepted and constantly practised during surgical operations, even if the Bostonian *savants* condemned it; and further, that any fresh departure in the direction of promoting painless surgery was open to the most embittered criticism. The importance of this fact will be made manifest in the sequel of our narrative.

Knowledge then Current about Ether and Nitrous Oxide Gas.

We must, however, retrace our steps for a brief space and try to obtain a clear idea of what was the current knowledge about ether before Long's first trials of its powers as an anæsthetic. In the books dealing with drugs and poisons ether found a place. It had been known since the thirteenth century, and although some of its merits were recognised it was regarded as so dangerous as to be taboo. However, when, through the enthusiasm of Dr. Beddoes, the work of Priestley, and the discovery of oxygen and nitrous oxide, pneumatic medicine became a vogue ether again assumed prominence.

The foundation of the Hotwells Hospital at Clifton, Bristol, by Dr. Beddoes gave that astute physician a wide experience in inhalational medication. He had studied Mayou's experiments and was familiar with Priestley's work, so that when young Humphry Davy, freed from his indentures to a doctor in Penzance, became his assistant, Beddoes was able to study the gases, the effects of which in the treatment of disease he has given in his delightful collected writings in four volumes. Of the volume entitled "Considerations on the Medicinal Use and on the Production of Factitious Airs," the first part was Beddoes's work, the second being due to James Watt, the engineer. In one of these volumes we find a letter from Dr. Pearson, of Birmingham, the accepted authority in his day upon therapeusis both in this country and in the States. In it he says that Beddoes's researches on "Factitious Airs" had led him to try "the vapour of ether" to relieve the suffering of phthisical patients and with benefit to them. Further, when Mitchell's book on chemistry appeared Beddoes found to his chagrin that the chemist declared nitrous oxide to be a "virulent poison," so he recommenced experiments with oxygen and nitrogen as well as with nitrous oxide gas. Davy, who undertook these researches, came to the conclusion that Mitchell was wrong, and that "the gaseous oxide of azote is perfectly expirable (*sic*)." He also announced that its inhalation cured the pain of an aching tooth, and added: "It may probably be used with advantage during surgical operations in which no great effusion of blood takes place." Alas, no one took the hint, and nitrous oxide remained for nearly 50 years the chief stock-in-trade of travelling lecturers, who gave this gas to members of their audience to provoke exhilaration and semi-unconscious gyrations. These "frolics" were well known, and M. Filvée, in his "Lettres sur l'Angleterre" (1802),[2] mentions these revels as one of the many follies to which English people were prone.

These practices became also common in the States, and it will be remembered it was at one of them that Horace Wells was present when he conceived the idea of using the gas as an anæsthetic. This, of course, happened much later, in 1844. But nitrous oxide gas needs a plant for its accurate manufacture, so that Pearson's suggestion of employing ether vapour as an exhilarant found ready acceptance. Cullen, whose works were read widely both here and in America, advocated ether, and Warren, of Boston, extolled its use in place of nitrous oxide. We see then that in 1841, when Long commenced practice, it was common knowledge that nitrous oxide produced exhilaration, but the suggestion of its employment as an anæsthetic by Davy was forgotten; ether was recognised as producing similar effects, but if we except the doubtful hint in the *Journal of Sciences and Arts* associated with the name of Faraday (1818), no one had grasped its greater merits, while the books of Pereira and others cautioned against its employment, since stupor and death they averred might readily be brought about. Long, it appears, had when a student actually inhaled ether during an "ether frolic," and was so far familiar with its effects.

Long's Early Experiments.

Jefferson in those days was an isolated country village—one might almost say, "the world forgetting, by the world forgot"—so that Long had to pursue his own way relying upon himself and practically out of touch with the centres of surgical thought. His personal charm and high scientific attainments made his house a place of social resort for the neighbourhood. Let Long himself tell us of the fateful happenings of December, 1841. He says:—

> In the month of December, 1841, or January, 1842, the subject of the inhalation of nitrous oxide gas was introduced in a company of young men in this village (Jefferson), and several persons present desired me to produce some for their use. I informed them that I had no apparatus for preparing or preserving the gas, but that I had a medicine (sulphuric ether) which would produce equally exhilarating effects; that I had inhaled it myself, and considered it as safe as the nitrous oxide gas. One of the company stated that he had inhaled ether while at school, and was then willing to inhale it. The company were all anxious to witness its effects. The ether was introduced. I gave it first to the gentleman who had previously inhaled it, then inhaled it myself, and afterwards gave it to all persons present. They were so much pleased with the exhilarating effects of ether that they afterwards inhaled it frequently, and induced others to do so, and its inhalation soon became fashionable in this country, and in fact extended from this place through several counties in this part of Georgia.
>
> On numerous occasions I have inhaled ether for its exhilarating properties, and would frequently, at some short time subsequent to its inhalation, discover bruises or painful spots on my person, which I had no recollection of causing, and which I felt satisfied were received while under the influences of ether. I noticed my friends while etherised, received falls and bangs, which I believed were sufficient to produce pain on a person not in a state of anæsthesia, and on questioning them they uniformly assured me that they did not feel the least pain from these accidents. These facts are mentioned that the reasons may be apparent why I was induced to make an experiment in etherisation.

First Operation under Ether Anæsthesia.

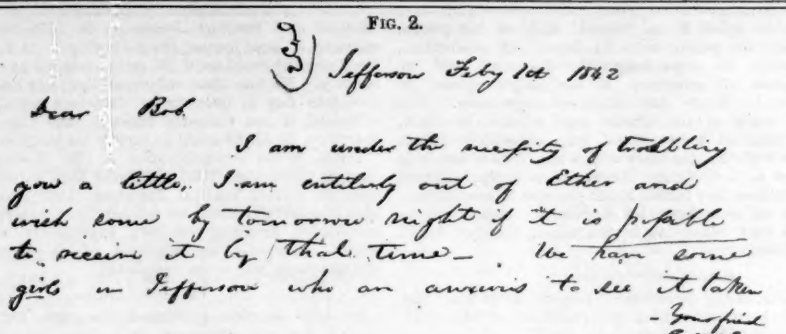
The first trial of his theory was made on March 30th, 1842, and the narrative is given in Long's published account of his experiments. James M. Venable was etherised by Long, who poured ether upon a towel, and when the patient was profoundly unconscious he removed a cyst from the back of the patient's neck. No pain was felt. This was four and a half years before Morton's first case. Subsequently Long used ether on several occasions, eight it is said, and every case was successful. That he did not employ it more largely was due firstly to the fact that his practice was one in which operations were seldom demanded, and secondly because the older practitioners around him urged upon him the "danger" of the method and the disastrous results which would follow a fatal accident, such an accident as they were good enough to say must soon occur. Indeed, Long was more than once threatened with pains and penalties by the community in which he lived if he persisted in his ether practices!

Reason of Long's Silence.

Now, although Long did not conceal his work, for it was known widely in the neighbourhood, as is shown by the facsimile letter which is here reproduced (Fig. 3), he took no occasion until later to read a paper before a medical society dealing with his experiments. This silence has been misconstrued. The simplest justice, however, must explain Long's reticence in a sense which redounds wholly to his credit. Long believed in his method, but recognised that it needed careful working out; he patiently experimented when patients seemed suitable; when they were

[2] Quoted by Mr. George Foy ("Janus") in his life of C. W. Long, 1900, p. 2.

FIG. 2.



Jefferson Feby 1st 1842

Dear Bob

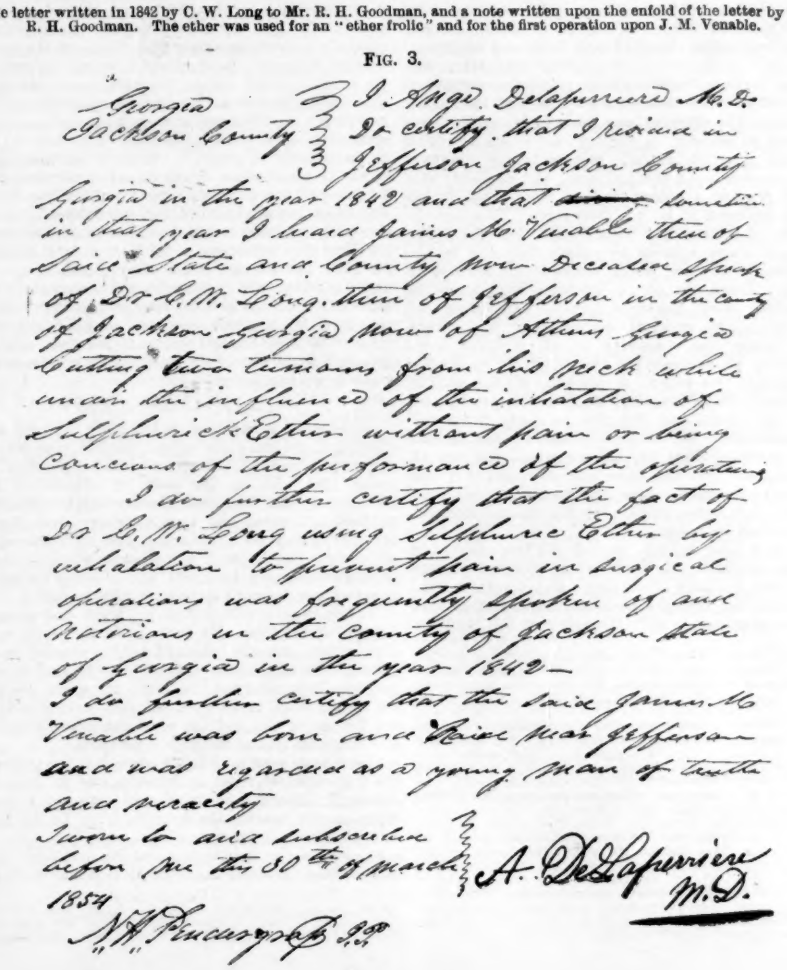
I am under the necessity of troubling you a little. I am entirely out of Ether and wish some by tomorrow night if it is possible to receive it by that time. We have some girls in Jefferson who are anxious to see it taken

Yours truly
C. W. Long.

This letter written to me by Dr. C. W. Long in which he ordered the Ether that he performed the first surgical operation on a patient under the influence of that drug - a tumor was removed from the neck of a young man - Mr. James Venable without giving him any pain - it was a complete success - this statement is truth as I learned it from Dr. C. W. Long R. H. Goodman.

The facsimile letter written in 1842 by C. W. Long to Mr. R. H. Goodman, and a note written upon the enfold of the letter by the hand of R. H. Goodman. The ether was used for an "ether frolic" and for the first operation upon J. M. Venable.

FIG. 3.



Georgia
Jackson County

I A. W. Dekalperriere M.D. do certify that I reside in Jefferson Jackson County Georgia in the year 1842 and that sometime in that year I heard James M. Venable then of said State and County now deceased speak of Dr. C. W. Long then of Jefferson in the county of Jackson Georgia now of Athens Georgia cutting two tumors from his neck while under the influence of the inhalation of Sulphuric Ether without pain or being conscious of the performance of the operation

I do further certify that the fact of Dr C. W. Long using Sulphuric Ether by inhalation to prevent pain in surgical operations was frequently spoken of and conversed in the county of Jackson State of Georgia in the year 1842—

I do further certify that the said James M. Venable was born and raised near Jefferson and was regarded as a young man of truth and veracity

Sworn to and subscribed before me this 30th of march 1854

A. W. Dekalperriere M.D.

N. W. Pruden J.P.

not available he tried it on himself and on his pupils. He knew that the public were in favour of mesmerism, a system which he regarded with disfavour, and he had no surgeon of eminence in his neighbourhood to whom he could apply for extended experience. The doctors who knew of his efforts were adverse to them, and so he preferred to wait and gain experience before attempting to exploit a discovery which might have less in it than appeared at first sight. He was alive to the fact that some might believe they found in his practice a development of hypnotism, an anæsthesia by suggestion. But while he waited events were happening in the bigger world of which Long recked nothing.

Morton and "Letheon."

Horace Wells had "discovered" nitrous oxide gas, had tried it and been successful in Hartford, Connecticut, 1844. His essay before the surgical world in the General Hospital, Massachusetts, had been a fiasco; he (Wells) had been shrieked out of the theatre with cries of "humbug." With or without the aid of Dr. Jackson, a man of scientific attainments and State geologist and chemist, Morton had administered ether vapour to himself, subsequently to one or two patients, and ultimately had been permitted by Warren, the surgeon, to administer his nostrum to a patient in the "General Hospital." "This, gentlemen," Warren had said, "is no humbug": anæsthesia by inhalation was an accepted fact.

These events occurred in 1846, but sadly enough the "ether controversy," which embroiled Morton, Jackson and Wells, involves much that we would rather not dwell upon, since the details are far from pleasant reading. We must, however, refer to some points since they connect the story with that of Crawford Long. We spoke of Morton using a "nostrum"; it was sulphuric ether with flavouring additions, and was termed "Letheon." Its identity with ether was challenged, and eventually the medical profession refused to allow further public trials without a disclosure of its nature and composition. The attempt was made to protect letheon by a patent, and to restrict its employment unless a royalty was paid. An English patent was actually granted. W. T. G. Morton was not a medical man, and probably saw no objection to reaping a golden harvest from what he no doubt honestly believed to be his discovery. This restriction on the use of letheon has been denied, but the letter of Dr. Charles A. Davis appears to substantiate the fact.[3]

We know the sequel; the world awoke to the anæsthetic value of ether. There can be no question that whatever motives actuated him Morton's public exhibitions of ether in an important surgical centre were the direct means of publishing the discovery to all civilised communities. Failing to support the rights which he fondly hoped would protect his patent of letheon, Morton sought to secure a grant from Congress, and to be proclaimed the discoverer of ether, and the first to apply it for the purposes of anæsthesia. Dr. Jackson advanced that he had a prior right, asserting that he had suggested the use of ether to Morton, and that the latter's employment of it was at his (Jackson's) instance. Into the merits of this controversy we need not enter, since both Morton and Jackson had been anticipated by Long.

The reasons why Long did not publish his first cases have been pointed out already. However, when Morton's success was bruited about, the duty of making a statement concerning his own cases was brought home to Long, and he put himself into communication with the editor of the *Southern Medical and Surgical Journal*. In 1849 we find in the columns of that journal the following: "A few months ago Dr. Long informed us of his early attempts at etherisation in surgery. He was then informed that any claims set up at this late day to priority of discovery would be severely criticised, if not violently resisted; and that he had best, therefore, do all he could to fortify his position."

Long, in his communication to the Medical Society of Georgia (December, 1849), explains that so soon as he saw from the current medical literature (1846) that letheon had been successfully used, he actually commenced a paper for publication detailing his own experiences with sulphuric ether. Unhappily, the exigencies of his practice intervened and the paper was never completed.

The Rival Claims.

In 1849 Morton petitioned Congress for a monetary reward for his discovery, and his claim was opposed by Jackson and Wells. In 1854, after much persuasion, Long was induced to write to Senator Dawson detailing his own work. The Senator sent Dr. Jackson a curious choice when it is remembered that that gentleman was one of those who claimed the laurels of having discovered ether. The interview took place at Athens, Georgia, to which town Dr. Long had removed in 1851, and Long told his story simply but so effectively as to convince Jackson of its truth.[4] The matter was ventilated in Congress by Senator Dawson, and although Morton's petition was never granted, yet to Crawford Long no recognition was vouchsafed. It is significant that Dr. Jackson urged upon Long that they, Jackson and Long, should unite interests, and as partners claim that they had respectively discovered the use of ether as an anæsthetic, and actually essayed experiments and successfully proved the safety and value of the method. Long was not tempted; he declined in words of striking dignity. He writes: "Our claims are rival, and permit me, sir, to say that although our claims are conflicting, I would not knowingly say anything in the article [he was preparing a full statement of his work in the form of an article] which would be displeasing to you. ..... Still, it becomes each one of us to use all honourable means to advance his own claims, and I know you will not blame me for attending to this matter, which so much concerns my reputation." So the matter dropped, and men forgot Long or minimised his work, and on Ether Day celebrations to Morton is accorded the palm. In 1877 Dr. Marion Sims championed Long's cause, but, unfortunately, his communication so well conceived was hurriedly executed and introduced the inaccurate statement that S. C. Wilhite had suggested to Long the idea of using ether. Wilhite himself contradicted this, and his letter is extant. As a matter of fact, he did not come to live with Long as a student until 1844.

Close of the Story of Long's Life.

So we come to the close of the story of Long and his great discovery, the story of a simple-minded man who, amidst the arduous labours of a scattered country practice, conceived a great idea and, in the teeth of opposition, and though haunted by the fear lest disaster might arise and ruin his professional name and reputation, yet had the courage to test his theory by experiment, and so obtained proof of its accuracy. Surely such a man was worthy to be the author of so momentous a discovery, and of being called one of the greatest men brought forth by a mighty nation.

A few words will suffice to trace the closing years of Long's useful life. He took no further steps to enforce his claims, but patiently laboured for his country and his people through the troublous years of the war, and at length, when brighter days returned, he built up again his practice and ultimately died in harness, his last words being an anxious inquiry as to the welfare of a patient at whose bedside he was when his mortal sickness seized him.

There have been memorials erected to the memory of Long, the discoverer of ether anæsthesia, one in Paris and one at Jefferson, Georgia, and in Boston men see a monument in white marble bearing the inscription: "To the Discoverer of Anæsthesia." It bears no name.

Shall we not in England accord the first place to Long, and in no unfriendly spirit claim for Morton and Wells less exalted

[3] Letter from Dr. Davis written 12 years after the patent was granted to Morton for his letheon, showing that he attempted to enforce patent rights:—"U.S. Marine Hospital, Chelsea, Massachusetts, April, 1859. Dr. Crawford W. Long, Athens, Georgia. Sir,—Hon. Judge Hyllier, Solicitor of Treasury Department, informed me about a year since, and recently repeated the same, that some years since you used sulphuric ether as an anæsthetic and had a record of the same. If it is not asking too much of you I would be greatly obliged if at your earliest convenience you would forward me a statement of the facts. I take the liberty to ask this of you because Mr. W. T. G. Morton, to whom in conjunction with Dr. C. T. Jackson a patent was granted in November, 1846, for using ether, has brought a suit against me as a Government Officer for an infringement of his patent. Judge Hyllier was confident that you could furnish me with proof sufficient to satisfy a jury that you used it in this way before he or Jackson claimed to have made the discovery. I should have asked for these proofs through my attorney and had them properly witnessed, &c., but the Secretary of the Treasury having decided that I used the article on my own responsibility, and therefore the Government were not bound to defend me, I wish to save as much expense as possible.—Very respectfully, (signed) CHARLES A. DAVIS, M.D., Physician and Superintendent."

[4] Dr. Jackson published a full account of this interview and the steps he took to verify Dr. Long's statements. See Boston Medical and Surgical Journal, April 11th, 1861.

niches in the Temple of Fame; for we may not forget that to them, and indeed to Dr. Jackson, the world owes very much, since, if not the first to employ ether as an anæsthetic, they made themselves the heralds of an epoch-making discovery, and they were in ignorance when they did so that Crawford Williamson Long had anticipated them?

(To be continued.)

THE LONDON COUNTY COUNCIL AND MEDICAL AFFAIRS.

Notification of Cerebro-Spinal Meningitis and Poliomyelitis.

THE Public Health Committee reported to the London County Council on Feb. 27th with regard to the compulsory notification of epidemic cerebro-spinal meningitis and acute poliomyelitis or acute polio-encephalitis. As to cerebro-spinal meningitis, the committee stated that this disease had been compulsorily notifiable in London since March 12th, 1907. During the time that had elapsed since that date, 656 cases had been notified, and detailed information, which might become valuable at any time, had been accumulated. Considerable attention had been given to this disease during recent years in the principal cities of Europe and America, and the committee regarded it as of importance that in London the continuity of statistical information should be preserved. Acute poliomyelitis was made compulsorily notifiable on Sept. 1st, 1911, and since then 50 cases of the disease had been notified. The disease occurred principally among children, 11 or 12 per cent. of the cases proving fatal, and infantile paralysis frequently resulting among those who survived.

The committee recommended that both these diseases should be added to the list of diseases permanently notifiable under Section 55 of the Public Health (London) Act, 1891, and the Council approved of this, and decided that they be so notifiable from and including March 13th, 1912.

The Deputy Medical Officer of Health.

With reference to the Council's authorisation of the appointment of a deputy medical officer of health and deputy school medical officer for the County of London at a salary of £1000 a year, the Establishment Committee reported that 30 applications for the position had been received and 10 selected candidates had been interviewed. In the opinion of the committee Mr. W. Butler, M S., M.B Glasg., D.P.H. Lond, medical officer of health and school medical officer for Willesden, was the candidate best fitted for the position, and it accordingly recommended his appointment. In compliance with the standing order requiring three names to be submitted to the Council the committee also mentioned the names of Mr. Alfred Greenwood, M.D., B S., B Sc. Vict., D.P.H. Irel., L R C.P. & S. Edin., L.F.P.S Glasg., barrister-at-law, and Mr. William Henry Whitehouse, M D, B.S. Durh., D.P H. Edin, barrister-at-law. On March 5th the appointment of Dr. Butler was approved by the Council.

The Medical Treatment of School Children.

It was reported at the meeting of the Education Committee of the London County Council on Feb. 28th that the Board of Education had expressed its views with regard to the experimental schemes for the treatment of children suffering from suppurating ears through the agency of various nursing institutions, which the Council has carried on in different parts of London during the last three years. The Board stated that it was very desirable that the question of the treatment of minor ailments in the county as a whole should be fully investigated by the Council, and it was reluctant to approve an isolated undertaking of this nature providing for the treatment of one type of ailment in one part of the county. If satisfactory results were to be obtained it was essential that the question should be considered as a whole in close connexion with the Council's scheme of medical inspection, the Council not committing itself in the meantime to isolated experiments which might prove subsequently a source of embarrassment in preparing a general scheme of treatment. For these reasons the Board was not willing, on the information before it, to sanction a proposed extension of the experiments in Camberwell.

In reply to this communication the Children's Care Committee stated that unless some such arrangements as those proposed were made many children in the district would be unable to obtain treatment. The committee recommended that the Board be urged to approve the experiment as a temporary measure on the understanding that the scheme would be under the supervision of the Council's school medical officer. The committee also suggested that the Board of Education be informed that the Council would be prepared to consider a general scheme for nursing treatment when a grant as promised on behalf of the Government should have been made in respect of the medical service.

The committee decided to advise the Council to send a communication on these lines to the Board of Education.

The Council has received the following letter from the Board of Education, dated Feb. 21st:—

SIR,—With reference to Sir Laurence Gomme's letter of the 12th December last, I am directed by the Board of Education to state that, under the code of regulations for public elementary schools, 1909, as modified by the minute of the Board of Education, dated June 25th, 1910, they are satisfied that provision has been made by the local education authority for the medical inspection of children attending the public elementary schools within the area of the authority for the year ending on the 31st July, 1912.

I am, &c.,
(Signed) GEORGE NEWMAN.

"The Maudsley Hospital."

The Asylums Committee has received an inquiry from the Lunacy Commission as to the name by which it was proposed that the mental hospital to be erected at Denmark Hill should be known, and has addressed a communication to Dr. Maudsley on the subject, who, in reply, has intimated to the great pleasure of the committee that he did not object to the use of his name in connexion with the title for the new institution. The committee has therefore determined that the hospital shall be known as "The Maudsley Hospital." The members felt that no more appropriate name could be chosen, and have expressed themselves as glad of the opportunity of thus permanently associating Dr. Maudsley's name with the good work to be carried on in the hospital which owed its establishment to his timely suggestion, and towards the cost of which he had made so generous a contribution.

Medical Superintendent of Long Grove Asylum.

In reporting the resignation by Dr. C. Hubert Bond of his appointment as medical superintendent of Long Grove Asylum, on his appointment by the Lord Chancellor to be a Commissioner in Lunacy, the Asylums Committee stated that Dr. Bond had been in the service of the Council for 19 years, and had been medical superintendent of the Epileptic Colony as well as of Long Grove Asylum. At both these institutions his care and forethought for the patients in his charge, his desire for the welfare of the staff, and his thorough administration had earned the highest approbation of the committee, which, while it congratulated Dr. Bond on his new appointment, regretted that the County of London would lose his valuable services.

FAR EASTERN ASSOCIATION OF TROPICAL MEDICINE.

THIS association held its Second Biennial Congress at Hong-Kong from Jan. 20th to 27th, under the presidency of Dr. J. MITFORD ATKINSON, of Hong-Kong. One hundred and fourteen members of the medical profession practising in the Far East were present, including the official delegates from the Governments of India, Ceylon, Netherlands-India, French Indo-China, Federated Malay States, Straits Settlements, Philippine Islands, Kiantschou (Imperial German Government), Macao, China, Japan, and the Commonwealth of Australia.

His Excellency Sir FREDERICK LUGARD, G C M.G., Governor of the Colony, in an address of welcome, referred to the foundation of the association on the initiative of the Bureau of Science of the Philippines in 1910. He spoke in terms of eulogy of the Tung Wah Hospital in Hong-Kong, which is entirely managed and controlled by an annually elected board of Chinese gentlemen, under the supervision of the Registrar-General, with a Government inspecting medical officer, and also of the University of Hong-Kong, which will shortly be opened with its first Faculty, that of medicine. He hoped that when next the association met in Hong-Kong it would assemble in the great hall of the University.

The PRESIDENT then delivered his address on the

"Progress of Tropical Medicine during the Past 25 Years." He traced the history of the discovery of the malarial parasite, and its transmission to man by the mosquito, and detailed the work done by the Government in Hong-Kong in malaria prevention, with the result that the number of admissions for malaria to the two largest civilian hospitals had fallen from an average of 971 in the quadrennium 1897–1900 to 693 for 1901–05, and to 594 for 1906–10. He showed how the seriousness of plague had diminished since Governor Sir Henry Blake in 1903 succeeded, by a practical demonstration of what could be accomplished by the people themselves by a thorough cleansing of their houses and clothing, in obtaining the coöperation of the Chinese population.

Scientific Meetings.

The whole of Jan. 22nd was devoted to Beri-beri, papers being read by Major Weston P. Chamberlain, M.D., and Captain Edward Vedder, M.D. (Manila); C. Noel Davis, M.B. (Shanghai); Victor G. Heiser, M.D. (Manila); L. Bréaudat, M.D. (Saigon); Dr. Legendre (Hanoi); H. Fraser, M.D. (Kuala Lumpur); Professor Teruuchi, M.D. (Tokyo); Colonel Makita (Tokyo); and Dr. Tsuzuki (Japan). An interesting discussion took place, and eventually the following resolution was passed:—

That the accuracy of the opinion of this association, recorded in 1910, has received further and more complete confirmation by investigators in Japan, China, French Indo-China, the Philippine Islands, Siam, Netherlands-India, the Straits Settlements, and the Federated Malay States—namely, that "beri-beri is associated with the continuous consumption of white (polished) rice as the staple article of diet."

It was therefore again desired to bring this opinion to the notice of the various Governments concerned and to recommend international action.

Jan. 23rd was devoted to Dysentery, Cholera, Intestinal Parasites, and Plague, papers being read and discussed on the Multiplication of Amœbæ of the Human Intestine, by A. Gauducheau, M.D., Médecin-Major (Hanoi); the Action of Ipecacuanha on Amœbæ, by Captain Vedder, M.D. (Manila); the Surgical Treatment of Dysentery, by O. Müller, M.D. (Hong-Kong); the Bacteriological Diagnosis of Cholera, by Professor Teruuchi, M.D., and O. Hida, M.D. (Tokyo); the Source of the Human Liver Distome (Clonorchis endemicus, Bälz), by H. Kobayashi, M.D. (Tokyo); Intestinal Parasites of Man in Hong-Kong, by J. Bell, M.R.C.S. (Hong-Kong); Immunisation against Pneumonic Plague, by Richard P. Strong, M.D. (Manila); Preventive Inoculation in Experimental Plague-Pneumonia, by Professor G. Shibiyama (Tokyo); the Connexion between Man and Rat in the Plague Epidemic in Malang, Java, during 1911, by W. L. de Vogel, M.D. (Batavia). This last paper was accompanied by an interesting series of lantern photographs, showing how the rats were found in the bamboo supports of the native houses.

On Jan. 24th papers were read on the Prophylaxis of Syphilis in Natives by "606," by M. L. R. Montel, M.D. (Saigon); the Care of the Eyesight in the Tropics, by G. M. Harston, M.D. (Hong-Kong); Vesical Calculi in South China, with a Report of more than 1000 Cases, by J. M. Swan, M.D. (Canton); Carbon-Dioxide Snow in Private Practice in the Tropics, by G. P. Jordan, M.B. (Hong-Kong); Results of the Past Two Years' Work in the Study of Tropical Sunlight, by Paul C. Freer, M.D. (Manila). There was no afternoon session on this day.

On Jan. 25th papers were read on Opium Poisoning, by A. Gauducheau, M.D., Médecin-Major (Hanoi); Care of Children in the Tropics, by G. M. Harston, M.D. (Hong-Kong); The Need for Physiological Standards in Clinical Research, by G. D. Whyte, M.B. (Swatow); The Prophylaxis of Umbilical Tetanus at Saigon, by M. L. R. Montel, M.D. (Saigon); Latest Researches into Spotted Fever, by Staff-Surgeon Dr. Fürth (Tsingtau); Relapsing Fever and its Treatment by Salvarsan, by W. V. M. Koch, M.D. (Hong-Kong); Miliary Fever, by Dr. Sairailhé (Bienhoa, Cochin China); and Blood Pressure, by J. C. Dalmahoy Allen, M.D. (Hong-Kong).

Jan. 26th was devoted to the subject of malaria and public health, and papers were read on Malaria as a Factor in the Etiology of Biliary Calculi, by G. A. Finlayson, M.B. (Singapore); Remarkable Parasites in a case of Tertian Malaria, by Captain H. M. Neeb, M.D. (Batavia); A Revision of the Anopheline Mosquitoes of British Malaya, by Major S. P. James, M.B., I.M.S. (Simla); Ceratopogon Parasitic on Anopheles, by A. T. Stanton, M.D. (Kuala Lumpur); Blackwater Fever in Burma, by L. J. Fink, M.B. (Burma); Anti-malarial Campaign in Formosa, by Dr. Hatori (Formosa); Mortality, Birth-rate, and Sanitation in Saigon, by M. L. R. Montel, M.D. (Saigon); Indian Native Immigration, by Sir Allan Perry, M.D. (Ceylon); and the Necessity for Uniform Quarantine Regulations for all the Coast Ports of China, by Fleet-Surgeon Dr. Uthermann (Tsingtau).

The association adopted a report to secure uniformity in quarantine at Eastern ports, the main points in which were: 1. The establishment of a definition for the term "status sporadicus" and a common standard for the term "epidemic." The definitions suggested were: *Status sporadicus* in respect of any communicable disease means the existence in a place, within the next preceding 14 days, of a case or cases of that disease, not definitely traceable to an imported case. *Status epidemicus:* Plague, cholera, small-pox, typhus exanthematicus, trypanosomiasis, or other communicable diseases shall be considered to be epidemic in any port, place, or defined locality, when after the first telegraphic report of the appearance or recrudescence of the disease, any weekly report thereafter shall show the occurrence of an average daily number of three cases, exclusive of cases imported into, or originating in, a quarantine station. 2. Circulation among the signatories of weekly returns of plague (human or rodent), cholera, small-pox, yellow fever, typhus, trypanosomiasis, and telegraphic information of first occurrence in a clean territory. 3. To issue a bill of health to all outgoing vessels detailing the facts as to quarantinable disease in the territory of departure. 4. To report by telegram to destination the departure of an infected or suspected ship, and endorse the ship's bill of health with full particulars as to disinfection practised. 5. Ships from a plague-infected place or carrying persons or suspected cargo therefrom, but showing no evidence of plague in man or rodent, shall not be disinfected at ports of call, if it can be shown that the vessel has been properly treated for vermin, the persons on board and their effects properly disinfected, and objectionable classes of cargo rejected or properly disinfected.

Jan. 27th was devoted to the business meeting. An invitation for the next biennial congress to be held at Saigon in 1913–14 was accepted. Votes of thanks were given to various officers and others—especially to Dr. Francis Clark, the honorary secretary, for his invaluable work in connexion with the Congress.

Exhibits.

Dr. J. M. Swan, Canton, lent a collection of 1000 vesical calculi; Mr. W. J. Tutcher, Hong-Kong, herbarium specimens of medicinal plants found growing in China; and the Tung Wah Hospital, Hong-Kong, Chinese drugs in common use. Messrs. Burroughs, Wellcome, and Co., London, exhibited "Wellcome" brand quinine, quinine hydrochloride tabloids, "epinine" for syphilis and trypanosomiasis, tabloid medicine cases, and other pharmaceutical preparations; Messrs. Down Bros., London, surgical instruments and aseptic furniture; Messrs. Allen and Hanburys, London, surgical instruments and "Allenbury" specialities; and E. Leitz, Wetzlar, microscopes and bacteriological instruments and apparatus.

THE LONDON SCHOOL OF CLINICAL MEDICINE.

THE annual dinner of this institution was held under the presidency of H.S.H. Prince LOUIS of BATTENBERG in the rooms of the Royal Institute of Painters in Water Colours, Piccadilly, W., on March 1st, when covers, distributed among 24 tables, were laid for more than 170 persons. The chairman, with Sir Thomas Barlow, Admiral Sir John Durnford, Director-General Sir James Porter, R.N., Mr. Rickman J. Godlee, and Sir Malcolm Morris, occupied one table, while the remaining 23 tables were apportioned among other members of the school and their guests, among whom may be mentioned Sir William Bennett, Surgeon-General Sir Arthur Branfoot, I.M.S. (retired), Sir James Crichton-Browne, Sir Henry Burdett, Sir James Mackenzie Davidson, Sir Dyce Duckworth, Sir John Rose Bradford, Director-General Sir W. Launcelot Gubbins, Sir Frederic Hewitt, Professor R. T. Hewlett, Admiral Swinton Holland, Admiral

H. W. Savory, Captain A. W. Clarke, Professor W. J. R. Simpson, C.M.G., Dr. S. Squire Sprigge, Dr. Frederick Taylor, Mr. C. Louis Taylor, Dr. C. C. Choyce (Dean of the School), and Mr. P. J. Michelli, C.M.G. (secretary of the Seamen's Hospital).

In proposing the toast of the evening, the CHAIRMAN pointed out that the School of Clinical Medicine was founded in 1906 for the purpose of affording for post-graduate students an opportunity of bringing themselves into touch with the most recent developments in medicine and surgery. It was felt that at the Dreadnought Hospital there existed a large amount of clinical material which was lost to education, and the sanction of the committee of the Seamen's Hospital Society having been obtained the school received the sympathy and help of the leading physicians and surgeons of the medical profession. During the first year's work 68 students attended, and since that time the activities of the school had steadily been extended. Since 1906, 560 students had been enrolled, composed of all classes of medical men coming from Great Britain and Ireland, Canada, United States of America, Peru, Nicaragua, Chili, Brazil, Argentine, Spain, Greece, Holland, Germany, France, India, China, Straits Settlements, Australia, New Zealand, and South Africa. The school had been well attended by officers of the medical services either before or after their entry into those services. From the very first the naval surgeons seconded for study had availed themselves of the advantages of the new school, and within the last 18 months, owing to the action of the Durnford Commission, acting in conjunction with the Director-General of the Medical Department of the Navy, Sir James Porter, systematic courses of instruction had been attended by from 20 to 30 officers annually. It was hoped that in the future a still closer connexion would be established between the Clinical School and the Royal Naval College at Greenwich. The Dreadnought Hospital and Clinical School afforded one of the most complete courses of operative surgery in the kingdom, and negotiations were also in progress whereby the post-graduate student would be afforded instruction in practical medicine. After complimenting the board of management of the Seamen's Hospital on its excellent work, His Serene Highness pointed out that hospitals were charitable institutions supported by a generous public. Everyone who realised what the nation owed to men of the mercantile marine should contribute to the maintenance of such excellent and necessary institutions as those of the Seamen's Hospital Society, and although the present occasion was not one in which he had been desired to make an appeal for money he would hint to those who were generously disposed that additions to the financial resources of the society would be more than welcomed.

Sir MALCOLM MORRIS, with whose name the toast had been coupled, in his reply said that the appointment of His Serene Highness (who had made the dinner a success by his presence in the chair that evening) to the office of a Sea Lord had given the most profound gratification to every Englishman. Comparing the progress which had been made in naval matters and in medicine, he pointed out an almost exact coincidence. The change from the old wooden ship to the modern Dreadnought, the torpedo boat, and the submarine was as great a revolution as that which had taken place in medicine owing to the action of one man, a man whom they had laid to rest within the last few days, Lord Lister. We trusted in the navy for our protection, and what the navy did for our shores and our homes Lord Lister had done for our bodies. Sir Malcolm Morris also referred to the introduction and use of the Roentgen rays and the enormous advance in medicine due to this agent owing to the work of, among others, Sir Mackenzie Davidson, and drew an interesting comparison between the deep-sea sounding experiments of Lord Kelvin and modern methods of exploring the cavities of the human body. Referring to the need for post-graduate studies, he said that the greatest insurance that could be given to the nation was the insurance of a highly skilled and highly educated doctor, and they were greatly indebted to the head of the Navy Department for allowing the naval surgeons to use the clinical school for instruction.

Captain A. W. CLARKE proposed the toast of "The Medical Services" with considerable happiness, departing from the formal statement, with which he had been supplied by the authorities, to detail his own experiences, as one who had been all over the world, of the vast debt which scattered communities owe to the ministrations of medicine.

Director-General Sir JAMES PORTER, who replied, said that it was now recognised that only the best that the medical profession could furnish was good enough for the service which he represented, and referred to the connexion between the Royal Naval Medical Service, the Royal Army Medical Corps, the Indian Medical Service, and the Colonial Services, which was now being recognised so that those services were not going to live any longer in watertight compartments.

Sir JOHN ROSE BRADFORD, who proposed "The Guests," referred with gratitude to the great interest which the Colonial Office and successive Colonial Secretaries had taken in the advancement of tropical medicine. With the toast he coupled in humorous phrases the names of Sir Thomas Barlow (the President of the Royal College of Physicians of London) and Mr. Rickman Godlee (the President of the Royal College of Surgeons of England), who both made suitable replies.

The dinner was the largest ever held by the school.

Public Health.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

County of East Sussex.—Mr. A. G. R. Foulerton attributes an important share in the reduction of infant mortality in this county to the influence of the large number of trained midwives introduced into the rural districts by the Sussex Nursing Association, and to the supervision of untrained midwives by the county authorities. In the class of mothers among whose infants the highest mortality occurs it is often of little use to distribute leaflets, however well prepared, while women health visitors are prone to be looked on with suspicion and considered unpractical. The midwife, on the other hand, nearly always has the mother's full confidence, and her advice usually determines the mother's treatment of her infant. In January, 1911, the midwives under supervision numbered 159, of whom 86 were trained. Out of 1931 maternity cases in which the midwives acted as such, and not as monthly nurses, it was necessary for them in 193 instances to send for medical aid on behalf of the mother or the infant. During 1910 the rate of reported still-births was 1 for every 74 confinements. The report reviews a variety of subjects arising out of the annual reports from individual districts in the county for 1910, and, as is frequently the case with county reports, makes a somewhat late appearance in consequence of the time required to get all the data completed. In this instance, however, the delay has enabled the county statistics to be revised by the Census data of 1911, which showed that the aggregate of the several local estimates of population was some 10,000 in excess of the actual figure.

County of Kent.—Dr. W. J. Howarth's report gives a further illustration of the great progress which has been made in many directions in organising the county sanitary service. It contains some important observations on the condition of the encampments of hop-pickers which should be seriously considered by those concerned. Where huts are employed it is common to find no provision for surface drainage and no rain-water spouting, with the result of much dampness and discomfort to the occupants. The tents used are often unsatisfactory, particularly for the women and children, being badly pitched and not watertight. The by-laws require cooking-houses to be thoroughly cleaned and kept clean, but unfortunately do not insist on cooking-houses being provided. The privy accommodation is also generally inadequate, and in Maidstone rural district Dr. Tew refers to the liability which still exists for the pollution of water-supplies, and expresses the fear that the lessons of the typhoid epidemic of 1897 are being forgotten or ignored. It would seem that the encampments of hop-pickers are in many places of a considerable size, and there is much to be said for the local authority detailing special men during the picking season to supervise the scavenging arrangements and ensure the protection of water-supplies. Frequent inspection of the foodstuffs brought in barrows to these encampments is also particularly necessary.

City of York.—Dr. Edmund M. Smith's annual report for this city is interesting reading as showing the care which is given to all branches of public health administration. It is reasonable to conclude that the notable decline in the

general death-rate and also in the mortality from tuberculosis and diseases of infancy which has characterised York during the past decade is to be attributed to a material extent to the increased efficiency of the municipal sanitary work. The efforts already made in various directions to combat tuberculosis are particularly striking, and the experience gained should be invaluable now that the administrative conditions are altered by general notification of pulmonary tuberculosis and by the prospect of sanatorium provision being available on a large scale. There are three school nurses for the city whose work is combined with that of health visiting. In the latter duties the rule that no notes should be taken by the health visitor at the homes is at first sight arbitrary, but has much to commend it. The results of inquiries made as to the practice of different towns in dealing with tuberculous meat show that while the recommendations of the Royal Commission of 1898 are usually taken as the standard they are frequently departed from. In York the entire carcass is not condemned when tuberculous lesions are present in both body cavities but are "in the early stages," or even when they are present in the muscular system or in the lymphatic glands embedded in the muscles. Cases in which the latter conditions obtain do not often come under notice in meat inspection, but when they do there is usually substantial ground for total condemnation. The employment of a veterinary meat inspector, who acts with the sanitary inspectors in systematic inspection of the numerous private slaughter-houses, has had satisfactory results, while butchers, as a result of their system of insurance, show an increasing disposition to consult the sanitary authorities in all cases of doubt. In advising on the destruction of rats Dr. Smith lays stress on the advantages of using bacterial virus and on the harmlessness of the virus to man. The latter statement needs the qualification that the virus should not be allowed to contaminate food or places where food is kept. A substantial beginning appears to have been made in applying the provisions of the Housing Act and regulations to insanitary property in York.

Metropolitan Borough of Wandsworth.—A bulky volume has lately been issued by the borough council which comprises a mass of information relating its general administration up to March 31st, 1911, and includes the reports of the medical officer of health and the public analyst for 1910. These show that the proportion of samples of foods taken under the Sale of Food and Drugs Acts which proved to be adulterated or otherwise unsatisfactory was as high as 9 per cent., a figure attributed mainly to greater discrimination in the selection of the samples and to the improved methods employed in obtaining them. Among the adulterations reported the substitution for arrowroot of a flour containing 90 per cent. of tapioca may be mentioned. As Dr. P. Caldwell Smith points out, a comparison of the price paid for the arrowroot, 1*s.* 6*d.* a pound, with that usually paid for tapioca, 3*d.* a pound, shows that a large profit may be obtained by this practice. The amount of boron preservative in some samples of prepared meats was exceptionally high, in one case (sausages) reaching 55 grains per pound. Proceedings were taken against certain of the vendors and convictions obtained. This was also the case with a sample of cocoa containing 33 per cent. of extraneous shell, and with several samples where margarine was substituted for butter. The penalties usually imposed in these cases seem, however, to be much too small. A fine of £1, or even £5, is not enough to act as a deterrent to the practice of gross and profitable frauds such as are recorded in these reports. We would like to see more drastic action, for example, in the case of skim milk found to contain 44 per cent. of added water, or of the vendor who carries unadulterated milk in his large churn for the benefit of inspectors and casual purchasers, while habitually distributing adulterated milk in small cans to his regular customers.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 94 largest English towns having an estimated population of 17,559,219 persons in the middle of this year, 8793 births and 5194 deaths were registered during the week ending March 2nd. The annual rate of mortality in these towns, which had decreased from 21·6 to 16·8 per 1000 in the three preceding weeks, further declined to 15 4 per 1000 in the week under notice. During the first nine weeks of the current quarter the mean annual death-rate in these large towns averaged 17·0 per 1000, while in London during the same period the average death-rate did not exceed 16·2 per 1000. The annual death-rates last week in the several towns ranged from 3·5 in Acton, 6·4 in Wallasey and Darlington, 7·5 in Ilford, and 8 0 in Lincoln, to 23·7 in Ipswich, 23·8 in Huddersfield, 24 6 in Merthyr Tydfil, 24 9 in Gloucester, and 26·8 in Great Yarmouth

The 5194 deaths from all causes last week were 451 fewer than the number in the previous week, and included 394 which were referred to the principal epidemic diseases, against numbers declining from 435 to 353 in the three preceding weeks. These 394 deaths from the principal epidemic diseases included 142 which resulted from whooping-cough, 109 from measles, 53 from diphtheria, 49 from infantile diarrhœal diseases, 21 from scarlet fever, and 20 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·2 per 1000, against 1·1 and 1·0 in the two preceding weeks. The deaths attributed to whooping-cough, which had decreased from 186 to 147 in the three preceding weeks, again declined to 142 last week, and caused the highest annual death-rates of 2 2 in Tottenham, 2·3 in West Bromwich, 2·8 in Walsall, and 3 8 in Merthyr Tydfil. The deaths referred to measles, which had been 98, 69, and 88 in the three preceding weeks, rose to 109 last week; the highest annual death-rates from this disease were 1·7 in Rhondda, 2 2 in Manchester, 2·5 in York, 2·7 in Salford, and 2 8 in Warrington. The fatal cases of diphtheria, which had declined from 71 to 44 in the four preceding weeks, rose to 53 last week, and included 23 in London and its 14 suburban districts, and 2 each in Birmingham, Grimsby, Manchester, Huddersfield, Rotherham, and Newcastle-on-Tyne. The deaths of infants under two years of age attributed to diarrhœal diseases, which had been 49, 58, and 39 in the three preceding weeks, rose to 49 last week; 23 deaths occurred in London and its suburban districts, and 3 each in Liverpool, Manchester, Salford, and Cardiff. The deaths referred to scarlet fever, which had been 22, 28, and 17 in the three preceding weeks, rose to 21 last week, and included 3 in Birmingham, and 2 each in London, Manchester, Preston, Huddersfield, and Leeds. The 20 fatal cases of enteric fever were 2 in excess of the average in the eight preceding weeks of the current quarter; 4 deaths were registered in Manchester, and 2 each in London, Salford, and Cardiff.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had decreased from 1512 to 1427 during the three preceding weeks, had further declined to 1392 on Saturday last; 160 new cases of this disease were admitted to these institutions during the week, against 178, 154, and 181 in the three previous weeks. These hospitals also contained on Saturday last 1136 cases of diphtheria, 462 of whooping-cough, 222 of measles, and 64 of enteric fever, but not one of small-pox. The 1228 deaths from all causes recorded in London were 106 fewer than the number in the previous week, and were equal to an annual death-rate of 14·2 per 1000. The deaths referred to diseases of the respiratory system, which had decreased from 545 to 352 in the three preceding weeks, further declined to 295 last week, and were 23 below the number registered in the corresponding week of last year.

Of the 5194 deaths in the 94 large towns, 172 resulted from different forms of violence, and 374 were the subject of coroners' inquests. The causes of 34, or 0·7 per cent., of the deaths registered last week were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Sheffield, Leeds, Bristol, West Ham, Bradford, Hull, Nottingham, Portsmouth, and in 66 other smaller towns. The 34 uncertified causes of death last week included 6 in Birmingham, 4 in London, and 2 each in Stoke-on-Trent, Dudley, St. Helens, Burnley, Blackburn, and Sunderland.

HEALTH OF SCOTCH TOWNS.

In the 18 largest Scotch towns, having an estimated population of 2,182,400 persons in the middle of this year, 1175 births and 784 deaths were registered during the week

ending March 2nd. The annual rate of mortality in these towns, which had decreased from 22·8 to 18·5 per 1000 in the three preceding weeks, rose to 18·7 per 1000 in the week under notice. During the first nine weeks of the current quarter the mean annual rate of mortality in these towns averaged 19 1 per 1000, and was 2·1 per 1000 in excess of the mean rate recorded during the same period in the large English towns. The annual death-rates in the several Scotch towns last week ranged from 10·3 in Kirkcaldy, 12·9 in Clydebank, and 13·3 in Aberdeen, to 22·5 in Hamilton and in Kilmarnock, and 24·0 in Greenock.

The 784 deaths from all causes were 9 in excess of the number in the preceding week, and included 93 which were referred to the principal epidemic diseases, against numbers steadily rising from 89 to 120 in the five preceding weeks. Of these 93 deaths, 56 resulted from measles, 16 from whooping-cough, 9 from diphtheria, 6 from scarlet fever, 5 from infantile diarrhœal diseases, and 1 from enteric fever, but not one from small-pox. These 93 deaths from the principal epidemic diseases were equal to an annual death-rate of 2·2 per 1000, or 1·0 per 1000 above that recorded in the 94 large English towns. The deaths attributed to measles, which had averaged 62 in the three preceding weeks, declined to 56 last week, and included 27 in Glasgow, 7 in Greenock, 5 in Edinburgh, and 5 in Kilmarnock. The deaths referred to whooping-cough, which had been 14 and 18 in the two preceding weeks, slightly declined to 16, and of this number 4 were registered in Glasgow, 3 in Edinburgh, and 2 in Dundee. The fatal cases of diphtheria, which had been 6 and 22 in the two previous weeks, fell to 9 last week, and included 4 in Glasgow and 2 in Edinburgh. The 6 deaths attributed to scarlet fever were 3 in excess of the number in the previous week, and included 2 in Glasgow and 2 in Aberdeen. The deaths of infants referred to diarrhœal diseases, which had been 14 and 11 in the two preceding weeks, further declined to 5 last week. The fatal case of enteric fever was recorded in Kirkcaldy.

The deaths referred to diseases of the respiratory system in the 18 towns, which had decreased from 220 to 192 in the three preceding weeks, further declined to 138 in the week under notice, and 24 deaths were attributed to different forms of violence.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,157,014 persons in the middle of this year, 673 births and 490 deaths were registered during the week ending March 2nd. The annual rate of mortality in these towns, which had decreased from 31·0 to 24·6 per 1000 in the three preceding weeks, further declined to 22 1 per 1000 in the week under notice. During the first nine weeks of the current quarter the mean annual death-rate in these Irish towns averaged 23·5 per 1000; in the 94 large English towns the mean annual death-rate during the same period did not exceed 17 0 per 1000, while in the 18 Scotch towns it was equal to 19·1 per 1000. The annual death-rates in the several Irish towns last week were equal to 24·9 in Dublin (against 14·2 in London), 21·6 in Belfast, 21 1 in Cork, 12·7 in Londonderry, 16·3 in Limerick, and 19·0 in Waterford; while in the 16 smallest of these Irish towns the death-rate last week was equal to 21·0 per 1000.

The 490 deaths from all causes in the 22 Irish towns were 55 fewer than the number in the previous week, and included 36 which were referred to the principal epidemic diseases, against numbers declining from 49 to 27 in the three preceding weeks; of these 36 deaths, 16 resulted from whooping-cough, 9 from diarrhœal diseases, 5 from measles, 3 from scarlet fever, and 3 from diphtheria, but not one from enteric fever or from small-pox. These 36 deaths from the principal epidemic diseases were equal to an annual death-rate of 1 6 per 1000; the death-rate last week from these diseases did not exceed 1·2 per 1000 in the 94 large English towns, while in the 18 Scotch towns it was equal to 2 2. The deaths attributed to whooping cough, which had declined from 25 to 14 in the three preceding weeks, rose to 16 last week, and included 11 in Belfast and 3 in Dublin. The deaths of infants referred to diarrhœal diseases, which had been 8 and 5 in the two previous weeks, rose to 9 last week; 4 deaths were recorded in Dublin, 2 in Belfast, and 2 in Clonmel. The 5 fatal cases of measles were equal to the average in the three preceding weeks, and were all registered in Dublin. The 3 deaths referred to scarlet fever, and the 3 fatal cases of diphtheria were also registered in Dublin.

The deaths referred to diseases of the respiratory system, which had decreased from 239 to 189 in the three preceding weeks, further declined to 135 last week. Of the 490 deaths from all causes in the 22 Irish towns, 142, or 29 per cent., occurred in public institutions, and 7 resulted from different forms of violence. The causes of 17, or 3·5 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 94 large English towns the proportion of uncertified causes of deaths in the week under notice did not exceed 0·7 per cent.

VITAL STATISTICS OF LONDON DURING JANUARY, 1912.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the ten diseases specified in the table was equal to an annual rate of 5·3 per 1000 of the population, estimated at 4,519,754 persons in the middle of the year. In the three preceding months the rates were 8·5, 7·8, and 6·3 per 1000 respectively. The lowest rates last month were recorded in Paddington, Hammersmith, City of Westminster, Stoke Newington, and Shoreditch; and the highest rates in Hampstead, St. Pancras, Holborn, Deptford, and Greenwich. Three cases of small-pox, all belonging to Woolwich, were notified last month, none having been notified in London during the six preceding months; 2 cases remained under treatment in a Metropolitan Asylums Hospital at the end of the month. The prevalence of scarlet fever continued to show a decline; this disease was proportionally most prevalent last month in Fulham, Chelsea, St. Marylebone, Deptford, Greenwich, and Woolwich. The Metropolitan Asylums Hospitals contained 1473 scarlet fever patients at the end of the month, against 2152, 2103, and 1878 at the end of the three preceding months; the weekly admissions averaged 165, against 317, 254, and 198 in the three preceding months. Diphtheria was slightly less prevalent than it had been in the preceding month; the greatest proportional prevalence of this disease was recorded in Hampstead, St. Pancras, Holborn, Poplar, Greenwich, and Lewisham. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 1143, 1327, and 1294 at the end of the three preceding months, had further declined to 1191 at the end of last month; the weekly admissions averaged 134, against 168 and 180 in the two preceding months. Enteric fever also was less prevalent than in the previous month; this disease was proportionally most prevalent last month in Bethnal Green, Stepney, Poplar, Southwark, Bermondsey, and Lambeth. There were 49 enteric fever patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 160, 85, and 76 at the end of the three preceding months; the weekly admissions averaged 8, against 9 in each of the two preceding months. Erysipelas was proportionally most prevalent in Holborn, Shoreditch, Bethnal Green, Poplar, Battersea, and Deptford. The 39 cases of puerperal fever notified during the month included 5 in Kensington, 5 in Stepney, 4 in Fulham, and 3 each in the City of Westminster, Poplar, Southwark, and Camberwell. Ten cases of cerebro-spinal meningitis, including 3 in Paddington; and 4 of poliomyelitis, including 2 in Camberwell, were notified during the month.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex- and age-constitution of the populations of the several boroughs. During the five weeks ending Feb. 3rd the deaths of 6736 London residents were registered, equal to an annual rate of 16·3 per 1000; in the three preceding months the rates had been 15·1, 14·1, and 16·1 per 1000. The death-rates last month ranged from 11·7 in Hampstead, 13·1 in Wandsworth, 13 6 in Stoke Newington, 13·9 in Lewisham, 14·0 in Camberwell, and 14·2 in Hackney, to 19·2

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JANUARY, 1912.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1912.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.‡								Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON	4,519,754	3	922	765	—	94	2	39	471	10	4	2310	5·3	1	63	9	55	76	16	88	310	0·7	6736	16·3
West Districts.																								
Paddington	142,3	—	15	28	—	2	—	1	6	3	—	55	4·0	—	4	—	1	4	—	—	9	0·7	212	16 5
Kensington	171,7	—	30	26	—	—	—	5	19	—	—	80	4·9	—	4	—	—	2	1	3	10	0·6	275	18·0
Hammersmith	122,7	—	16	21	—	—	—	—	13	—	—	50	4·2	—	—	1	1	—	—	1	3	0·3	169	15·0
Fulham	155,4	—	47	22	—	2	—	4	19	—	—	94	6·3	—	3	—	3	4	1	1	12	0·8	228	16·0
Chelsea	65,39	—	19	7	—	1	—	—	5	—	—	32	5·1	—	1	—	—	—	1	1	3	0·5	116	19·2
City of Westminster	157,248	—	15	22	—	—	—	3	11	—	—	51	3·4	—	3	—	—	1	1	2	7	0·5	227	16·9
North Districts.																								
St. Marylebone	116,155	—	37	20	—	1	—	—	5	—	1	64	5·7	—	2	1	1	3	—	2	9	0·8	178	17·0
Hampstead	85,966	—	17	32	—	2	—	—	2	—	1	54	6·6	—	—	1	4	—	—	—	5	0·6	86	11·7
St. Pancras	216,145	—	58	68	—	3	—	1	25	—	—	155	7·5	—	—	—	5	4	—	7	16	0·8	325	16·4
Islington	326,398	—	67	47	—	7	—	2	17	—	—	140	4·5	—	8	—	5	10	—	6	29	0·9	532	17·7
Stoke Newington	50,581	—	13	4	—	—	—	—	3	—	—	20	4·1	—	—	—	—	—	—	1	1	0·2	63	13·6
Hackney	222,986	—	61	39	—	4	—	1	25	1	—	131	6·1	—	—	—	3	5	—	3	11	0·5	290	14·2
Central Districts.																								
Holborn	48,026	—	5	12	—	—	—	—	13	1	—	31	6·7	—	1	—	1	—	—	—	2	0·4	81	18·9
Finsbury	86,130	—	13	16	—	1	—	2	11	—	—	43	5·2	—	—	1	—	—	—	5	6	0·7	165	20·7
City of London	18,695	—	4	2	—	—	—	—	1	1	—	8	4·4	—	1	—	—	—	—	1	2	1·1	36	22·1
East Districts.																								
Shoreditch	110,430	—	12	9	—	1	—	1	17	—	—	40	3·8	—	1	1	3	3	—	6	14	1·3	214	21·2
Bethnal Green	127,985	—	31	9	—	5	—	—	20	—	—	65	5·3	—	—	1	1	1	1	1	5	0·4	213	17·6
Stepney	277,315	—	29	38	—	10	—	5	39	1	—	122	4·6	—	—	—	2	7	2	9	20	0·8	419	16·5
Poplar	161,597	—	20	35	—	7	—	3	33	1	—	99	6·4	—	—	—	4	11	1	4	20	1·3	304	20 2
South Districts.																								
Southwark	190,017	—	24	28	—	8	—	3	25	1	—	89	4·9	—	2	—	4	2	—	2	10	0·5	299	17·1
Bermondsey	125,260	—	23	25	—	10	—	—	14	1	—	73	6·1	—	5	—	3	3	1	3	15	1·2	229	19·6
Lambeth	297,550	—	68	29	—	13	—	2	25	—	—	137	4·8	—	2	1	4	5	4	7	23	0·8	414	15 0
Battersea	167,589	—	39	23	—	2	—	—	25	—	—	89	5·5	—	—	—	2	2	1	4	9	0·6	243	16·2
Wandsworth	321,881	—	65	55	—	5	2	1	24	—	—	152	4·9	—	—	1	4	3	—	7	15	0·5	382	13·1
Camberwell	261,591	—	48	42	—	2	—	3	25	—	2	122	4·9	—	4	—	1	—	—	3	8	0·3	339	14·0
Deptford	109,377	—	36	21	—	—	—	1	21	—	—	79	7·6	—	11	—	—	2	—	2	15	1·4	171	17·2
Greenwich	95,994	—	30	24	—	—	—	1	10	—	—	65	7·1	—	10	—	—	5	—	2	17	1·8	145	16·1
Lewisham	165,249	—	39	39	—	6	—	—	8	—	—	92	5·8	—	—	—	3	—	2	4	9	0·6	210	13·9
Woolwich	121,932	3	41	20	—	2	—	—	10	—	—	76	6·5	1	1	1	—	1	—	1	5	0·4	171	15·6
Port of London	—	—	—	2	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup. † The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard. ‡ Deaths from "typhus fever" and "other continued fevers" are not now distinguished in the Registrar-General's weekly returns; these two columns are therefore omitted from the Table.

in Chelsea, 19·6 in Bermondsey, 20·2 in Poplar, 20·7 in Finsbury, 21·2 in Shoreditch, and 22·1 in the City of London. The 6736 deaths from all causes included 310 which were referred to the principal epidemic diseases; of these, 1 resulted from small-pox, 63 from measles, 9 from scarlet fever, 55 from diphtheria, 78 from whooping-cough, 16 from enteric fever, and 88 from diarrhœa and enteritis among children under 2 years of age. The lowest death-rates from these diseases in the aggregate were recorded in Hammersmith, Stoke Newington, Holborn, Bethnal Green, Camberwell, and Woolwich; and the highest rates in Shoreditch, Poplar, Bermondsey, Deptford, and Greenwich. The 63 deaths from measles were 151 below the corrected average for the corresponding period of the five preceding years; the greatest proportional mortality from this disease was recorded in Paddington, Islington, Bermondsey, Deptford, and Greenwich. The 9 fatal cases of scarlet fever showed a decline of 34 from the corrected average number. The 55 deaths from diphtheria were 31 below the average; this disease was proportionally most fatal in Hampstead, St. Pancras, Shoreditch, Poplar, and Bermondsey. The 78 fatal cases of whooping-cough were 74 fewer than the corrected average number; the greatest proportional mortality from this disease was recorded in Paddington, Islington, Shoreditch, Poplar, and Greenwich. The 16 deaths from enteric fever were 6 below the average, and included 4 in Lambeth, 2 in Stepney, and 2 in Lewisham. The mortality from diarrhœa and enteritis among children under two years of age was proportionally greatest in St. Pancras, Finsbury, Shoreditch, and Stepney. In conclusion, it may be stated that the aggregate mortality in London last month from the principal epidemic diseases (excluding diarrhœa) was 40 per cent. below the average.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeons: R. A. Ross to the *Hindustan;* H. W. Gordon-Green to the *Collingwood;* and R. J. MacKeown to the *Vanguard.* Staff-Surgeon: W. K. Hopkins to the *Commonwealth.* Surgeons: J. C. F. D. Vaughan to the *Vanguard;* H. B. German to the *Collingwood;* and M. H. Langford to the *Halcyon*, additional, for the *Spanker.*

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel William A. Morris is placed on retired pay (dated March 1st, 1912).

Major William Hallaran to be Lieutenant-Colonel vice W. A. Morris (dated March 1st, 1912).

The undermentioned Captains to be Majors (dated Feb. 29th, 1912): Francis P. Lauder and John Tobin.

Surgeon-General J. G. MacNeece has been selected for appointment as Principal Medical Officer of the Southern Command, in succession to Surgeon-General H. R. Whitehead, C.B., with effect from April 1st.

Colonel R. I. D. Hackett, principal medical officer of the Karachi Brigade, has been granted six months' combined leave of absence home from India. Colonel W. W. Pike, D.S.O., lately senior medical officer at Cairo, has taken up duty as Principal Medical Officer of the Bombay Brigade, in succession to Colonel R. H. Forman, honorary surgeon to H.E. the Viceroy, who has been placed on retired pay. Colonel W. G. Macpherson, C.M.G., principal medical officer of the Fourth (Quetta) Division, has been appointed an Honorary Surgeon to the King.

Lieutenant-Colonel M. J. Sexton, lately holding medical charge of the Military Hospital, Arbor Hill, Dublin, has taken up duty at Wynberg. Lieutenant-Colonel J. Donaldson, in charge of the isolation hospital at Aldershot, has embarked for a tour of duty in India. Lieutenant-Colonel E. A. Burnside, from Golden Hill, has been appointed to command the Station Hospital at Bellary, Madras Presidency. Lieutenant-Colonel J. M. F. Shine, on return from Fyzabad, has been appointed Senior Medical Officer at Jersey, vice Lieutenant-Colonel F. P. Nichols. Lieutenant-Colonel L. T. M. Nash, on completion of a tour of service in India, at Karachi, has been appointed to hold charge of the Military Hospital at Hounslow. Lieutenant-Colonel T. G. Lavie, at present serving at Queenstown, has been placed under orders for a tour of service in Malta.

Major R. W. Clements, specialist sanitary officer of the Ninth (Secunderabad) Division, has been appointed to the substantive charge of the enteric fever convalescent depôt at Wellington, on relief by Captain W. R. Galwey. Major L. Humphry, specialist in advanced operative surgery to the Sixth (Poona) Division, has been granted six months' general leave of absence home from India, with effect from March 30th. Major E. P. Connolly, on arrival in India for a tour of service from Cardiff, has been posted to the Second (Rawal Pindi) Division. Major H. Herrick has been transferred from Hyderabad to the Station Hospital at Naini Tal. Major G. M. Goldsmith, from Maymyo, has been appointed to command the Station Hospital at Thayetmyo, Burma. Major H. H. Norman, from Kasauli, has taken up duty at Shwebo. Major H. S. Roch has been transferred from Lincoln to the Military Hospital at York for duty. Major J. M. Cuthbert, from Leith, has been appointed to the Military Hospital at Edinburgh. Major A. Chopping has been transferred from Cherat to Peshawar. Major J. G. MacNaught, on completion of a tour of service in South Africa, has been appointed to the Aldershot Command. Major E. C. Freeman has been granted by the War Office one year's extension of his appointment as Staff Officer to the Administrative Medical Officer of the East Anglian Division.

Captain T. J. Potter, specialist in bacteriology, has left the London District for service in Egypt. Captain E. V. Aylen, specialist in dermatology, Fourth (Quetta) Division, has been granted eight months' general leave of absence home from India. Captain H. Rogers, stationed at Fort Westmoreland, has been placed under orders for a tour of service in Malta. Captain A. H. Bond, from Naini Tal, has joined the Station Hospital at Delhi for duty. Captain C. T. Connyngham has been appointed Specialist in Dermatology and Venereal Diseases to the Fourth (Quetta) Division. Captain J. A. Bennett has been appointed Specialist in X rays and Electrical Science to the Sixth (Poona) Division. Captain D. M. Corbett has been granted eight months' general leave of absence home from India. Captain R. F. O'T. Dickinson has been transferred from Jhansi to the Station Hospital at Bareilly. Captain F. A. McCammon, at present serving at Poona, has been placed under orders for duty at Colaba. Captain B. A. Craig and Captain H. M. J. Perry have arrived home on duty from Hong-Kong; the former has been posted to Aldershot and the latter to the Eastern Command.

Lieutenant H. S. Blackmore and Lieutenant M. Drummond have been posted to the London District. Lieutenant E. S. Calthorpe has been appointed to Queen Alexandra Military Hospital at Millbank for duty. Lieutenant A. W. Bevis, Lieutenant M. J. Williamson, and Lieutenant C. L. Franklin have embarked for a tour of service in South Africa. Lieutenant T. W. Stallybrass has joined for service in Egypt. Lieutenant P. S. Tomlinson has embarked for a tour of duty in India.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel H. Fooks, at present holding medical charge of the 15th Lancers (Cureton's Multanis) at Risalpur, has been selected for appointment as officiating Principal Medical Officer of the Aden Brigade during the absence on leave of Lieutenant-Colonel H. F. Cleveland. The services of Lieutenant-Colonel B. B. Grayfoot have been placed at the disposal of the Government of Bombay. Lieutenant-Colonel J. Crimmin, V.C., C.I.E., has been appointed Presidency Surgeon of the Third District in Bombay. Lieutenant-Colonel A. Colman, civil surgeon at Rawal Pindi, has been granted one month's leave of absence.

On relief by Major T. G. N. Stokes of the office of Sanitary Commissioner of the Central Provinces, Major W. H. Kenrick has been placed on special duty in connexion with the prevention of malarial fevers in the Central Provinces. Major T. S. Horley has been transferred as District Medical Officer at Madura. The services of Major L. E. Gilbert have been placed at the disposal of the Government of Madras. Major H. Bennett has been selected for appointment as Civil Surgeon at Karachi. Major R. G. Turner on return from leave has been posted as Civil Surgeon at Naini Tal. The services of Major C. M. Matthew have been placed at the disposal of the Government of India for employment at Madras as Officiating Medical Storekeeper. Major H. J. K. Bamfield has been appointed Specialist in Midwifery and

* Including membranous croup. † The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard. ‡ Deaths from "typhus fever" and "other continued fevers" are not now distinguished in the Registrar-General's weekly returns; these two columns are therefore omitted from the Table.

Diseases of Women and Children to the Second (Rawal Pindi) Division.

Captain N. S. Sodhi has been transferred from Gurgaon to Ludhiana District as Plague Medical Officer. Captain H. W. Illius, Bengal Presidency, has returned to India from leave. Captain H. Ross, chief plague officer in the United Provinces, has been placed on special duty at Lucknow in connexion with the Prince of Wales Medical College. Captain A. W Howlett has been appointed Superintendent of the Central Prisons at Agra, vice Captain A. W. Overbeck-Wright. Captain A. F. Babonau, plague medical officer at Gurgaon, has been transferred to the Ambala district Captain H. B. Scott has been placed in charge of the Civil Surgeoncy at Shwebo until relieved by Captain W. Egan, R.A.M.C.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant Thomas Lindsay is confirmed in his rank.

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st South-Western Mounted Brigade Field Ambulance, Royal Army Medical Corps: The undermentioned officers to be Captains (dated Nov. 16th, 1911):—Lieutenant Thomas H. Haydon and Lieutenant James C. Burton.

2nd Wessex Field Ambulance, Royal Army Medical Corps: The undermentioned officers to be Captains (dated Dec. 25th, 1911):—Lieutenant Edward R. Clarke and Lieutenant Charles R. Crowther.

Attached to Units other than Medical Units.—Lieutenant Andrew Robertson to be Captain (dated Dec. 9th, 1911). Captain William B. Armstrong to be Major (dated Jan. 11th, 1912). Captain Robert J. W. Oswald resigns his commission (dated Feb. 28th, 1912).

THE ROYAL ARMY MEDICAL COLLEGE.

The Director-General of the Army Medical Service and officers of the Royal Army Medical College entertained a numerous and distinguished company at a conversazione on Feb. 23rd, thereby affording an opportunity for their guests to become acquainted with some of the many-sided activities of this branch of our profession. In the spacious and admirably lighted laboratories and museum of the educational portion of the institution were displayed many interesting exhibits, microscopic, electrical, and chemical, as well as those more especially of military medical appliances. The micro-organisms of the chief tropical diseases were shown in an almost exhaustive series of beautifully stained specimens, and special demonstrations were given by Lieutenant-Colonel Sir W. Leishman, F.R.S., of kala-azar and tick fever; while Captain J. C. Kennedy exhibited Mediterranean fever and trypanosomiasis. The latest method of staining spirochætæ was shown by Major L. W. Harrison, and Major W. S. Harrison and Major H. E. M. Douglas, V.C., D.S.O., demonstrated ankylostomiasis. In the hygienic laboratories Lieutenant-Colonel C. H. Melville and Major H. B. Fawcus showed various recent methods of water sterilisation, including the use of filters, heat, and electricity. A specially interesting exhibit was that by Major E. M. Pilcher, D.S.O., of the present field medical and surgical equipment of our military forces. From the surgical standpoint of to-day it would seem impossible to devise anything more comprehensive or complete, while the ingenuity displayed in economising space could not be surpassed. The Director-General and Lady Gubbins received their guests in the mess quarters, where refreshments were provided, and the band of the Royal Army Medical Corps performed during the evening. The mess is connected with the college by a sort of rialto the constructional arrangements being exceedingly well designed for the bodily comfort as well as the intellectual advancement of the officers of the corps. The Secretary of State was present and several members of the Army Council, to whom the evidences of intellectual alertness and a keen scientific spirit in this branch of military administration must have given great satisfaction.

ESPERANTO AND THE RED CROSS.

A knowledge of Esperanto would facilitate the ambulance work of the Red Cross, for it must often have happened on the field of battle that much suffering has resulted through a lack of understanding between the wounded man and the Red Cross worker. Already in France the military authorities have taken up the subject of Esperanto, and we are informed that there are many Esperantists in the French army. In this country but little attention has been paid to the matter probably because Esperanto has become associated with so many "isms" and cranky ideas, but many people apparently find it a fascinating hobby, and some commercial firms are using it to extend their business relations abroad. With the object of calling attention to the use of Esperanto in Red Cross work M Privat visited Lord Haldane at the War Office on Feb. 29th. Lord Haldane, in answer to a question as to whether Esperanto could be introduced into the British Army, explained that the conservative nature of the English people would make official recognition very difficult, though he recognised the utility of Esperanto, more especially as it appeared to be spreading in China and Japan.

THE GRAND PRIORY OF THE ORDER OF THE HOSPITAL OF ST. JOHN OF JERUSALEM IN ENGLAND.

The King has sanctioned the following promotions in and appointment to the Order of the Hospital of St. John of Jerusalem in England:—As Knights of Grace: Mr. John Astley Bloxam (from Honorary Associate), Surgeon-General Hayward Reader Whitehead, C.B., and Dr. William Edmund Cant (from Honorary Associate).

Correspondence.

"Audi alteram partem."

EXOPHTHALMIC GOITRE.

To the Editor of THE LANCET.

SIR,—The discussion now proceeding at the Royal Society of Medicine induces me to offer the following suggestions on the pathology of Graves's disease.

Most authorities agree that it is a condition due to excessive absorption of thyroid colloid. The method by which the colloid is absorbed is not yet known. In the case of the normal gland it is often stated that the colloid stored in the lumina of the vesicles directly enters the lymphatic circulation. Intercellular communications have been described uniting the lymphatics and the vesicles, and a colloid-like substance is to be found in the lymph spaces of any thyroid section. The mechanism by which the colloid becomes transferred to the lymphatic spaces is not explained, nor is it known how such a process is normally controlled. It is possible that the colloid accumulates in the vesicles until sufficient pressure is reached to open up the communications with the lymphatics, or to rupture the vesicle and empty its contents into the surrounding connective-tissue spaces, and that the process may be facilitated by contraction of the muscles outside the gland. Such an explanation seems to me utterly inadequate.

Distension of the vesicles does not determine the escape of the colloid. In cases of parenchymatous goitre the vesicles distend enormously without emptying. In cases of acute inflammation the gland becomes depleted of colloid and the small vesicles are sometimes to be found empty when the larger ones are still distended. It is evident, therefore, that there must be some other method of absorption. There is no doubt that it is sometimes possible in cases of goitre with distension of the vesicles to trace a direct connexion between the colloid of the vesicles and the contents of the lymphatic spaces; such a condition, however, would seem to be an occasional accident rather than the normal process of absorption. In sections coagulated lymph closely resembles colloid, and is probably often mistaken for it.

The other explanation is that the colloid is absorbed by a method of diffusion through the walls of the capillaries. The blood-supply of the thyroid vesicles is analogous to that of the lung alveoli. The capillaries are very numerous and are in close apposition with the cells lining the vesicles. It is not uncommon to find capillary loops projecting into the lumina, also, to add to the analogy, the cells lining the vesicles are capable of phagocytic action and sometimes contain blood corpuscles and pigment. If we can assume that some substance, perhaps the internal secretion of another gland acting through the blood-stream, can render colloid

diffusible, we have a method by which the requirements for colloid absorption can be delicately adjusted. It has been suggested by Woolley[1] that the non-diffusible colloid is converted into a diffusible crystalloid.

In Graves's disease the changes in character of the vesicles—viz., the tubular structure, the infolding of the walls, and the high columnar epithelium—can be largely explained by an absence of distension. The glands, however, show indications of hypertrophy in that they are larger and more numerous. The excessive absorption of colloid can be explained by two factors, an increased diffusibility of the colloid and an increased blood-supply. The former is probably the more important.

In a previous paper[2] I pointed out that the changes in the thyroid gland in some cases of primary Graves's disease are focal in character. The distribution, to go back to the analogy of the lungs, is like that of a broncho-pneumonia. The areas affected vary from the size of miliary tubercles to nodules half an inch in diameter and larger. It is impossible to explain such a distribution of the changes by any theory which attributes the condition to alterations in the blood or nervous system, for it is evident that such alterations would affect the whole of the gland tissue or, at any rate, that of one lobe. We are left, therefore, with the explanation that at the centre of each of these foci there is some substance being formed which renders the colloid diffusible and possibly increases the blood-supply locally. Associated changes often found in the centre of these areas are lymphocytic and plasma-cell accumulation. In some cases these are slight, in others marked, and they are similar to the changes of chronic inflammation.

It is suggested that these points indicate an agent as the cause of Graves's disease which can lodge in capillaries and set up changes in the surrounding glands leading to absorption of colloid. The toxic action of such an agent must be slight. It is possibly a micro-organism. Other facts suggesting the same idea are the enlarged glands of the neck, the lymphocytosis, and the well-known fact that many cases of Graves's disease end with myxœdema. I have been endeavouring to test whether the gland in cases of Graves's disease contains a ferment which can render colloid diffusible. The experiments are not yet completed. The advisability of inoculating suitable animals—e.g., monkeys—with Graves's disease thyroid should be considered.

I am, Sir, yours faithfully,

HELEN CHAMBERS, M.D. Lond.,
Clinical Pathologist, Royal Free Hospital.

Feb. 24th, 1912.

To the Editor of THE LANCET.

SIR,—In your excellent abstract of the discussion on Partial Thyroidectomy and Local Anæsthesia (i.e., analgesia) my remarks on the employment of ether in such cases are not given quite correctly. May I extend your abstract?

I said that provided atropine was injected before ether was used, that anæsthetic was suitable for many of the cases. My experience with the open method of etherisation and of intravenous infusion of ether has led me to this conclusion, but as I pointed out the employment of ether by *any* method is open to one objection. The stimulation of the ether gives a spurious appearance of well-being to the patient whose real condition is thus masked. The operator may be misled and induced to undertake a more serious surgical procedure than he originally contemplated. The patient presents such a favourable aspect that even against his better judgment he continues his work, anxious as always to do the utmost for the patient.

When the ether administration is stopped collapse sets in and in some cases the patient cannot withstand the depression and sinks. If chloroform is employed in the way I suggest both the anæsthetist and the surgeon are better able to estimate the degree of operative shock, and the latter can restrict his procedures to the immediate necessities of the case. There should be no post-operative shock due to the anæsthetic unless over-dosage or asphyxial complications have been allowed to complicate the normal course of narcosis.

I am, Sir, yours faithfully,

DUDLEY W. BUXTON.

Mortimer-street, Cavendish-square, W., March 2nd, 1912.

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[1] Woolley: Bulletin Johns Hopkins Hospital, February, 1912.
[2] Observations on the Pathology of Innocent Goitre, Brit. Med. Jour., Sept. 25th, 1909.

THE PRESENT POSITION OF SALVARSAN.

To the Editor of THE LANCET.

SIR,—In view of the controversy at present raging as to the benefits to be expected from the arsenical treatment of syphilis one is forced to ask the question, Is it really as efficacious and curative in *the long run* as mercury and should we discard the latter drug as the routine treatment? I have had 29 years' experience of treating syphilis and conscientiously believe from the proved results of my treatment of many scores of cases which have been under my care from start to finish that when mercury is properly and adequately administered it will actually cure syphilis. I am in touch with many patients who were infected and treated years ago. I know them, their wives and children, and in a few instances the grandchildren. They are all free from any clinical signs of the disease and in those cases which have allowed a Wassermann to be done they have given negative results. My observations refer to patients who were infected from 15 to 40 years ago, or even longer. I think that one should be chary in expressing a dogmatic opinion upon the *cure* of a case of syphilis until time has assisted one to that end. When one knows from practical experience what can be done with mercury one does not feel inclined to entirely discard it in favour of another preparation which, regarded from the standpoint of time, cannot be said to have stood as lengthy a "curative" test. That arsenic is of undoubted value in certain cases there can be no question. But is it advisable to use it as a routine treatment, and can it be truthfully said to the patient that one will eradicate and cure syphilis by its use *alone*, or advise that it should be regarded as the premier drug?

In my experience one might almost say that there are two types of syphilis: that as seen in the better-class private patient, in contra-distinction to the disease as met with in hospital cases. I never see in private the gross ravages of the complaint which are so common in institutional clinics. Moreover, in the private cases after, certainly, six weeks' treatment it would be difficult for anyone to assure himself that the patient had got or had ever had syphilis, and if they will only follow out instructions they usually never have any further sign of the trouble. The hospital case, owing to loss of time in attending, which usually means loss of work and wages, is too frequently content to stop treatment with the disappearance of symptoms and does not seek further advice until a relapse compels it to do so. Their syphilis simmers within them. Mercury has received much unmerited blame, partly from the way it has been tendered and accepted. One meets with cases who complain that they have been under Mr. So-and-so's care for two years and are not yet well! Cross-examination reveals the fact that they may have visited the surgeon in question twice or thrice. They certainly have not accepted the proposed treatment or obeyed as regards alcoholic moderation. Consequently, they blame the surgeon and the drug. Again, I have had cases which were treated as syphilitic with mercury and no beneficial result ensued—for this reason, they were tubercle.

Certain cases of syphilis react magically to arsenic, whilst others do not respond satisfactorily. The same may be said of mercury. That arsenic does clear up certain specific lesions with remarkable rapidity is common knowledge. But mercury will do ditto. Hospital practice is one thing and private practice another. The better class, educated patient is apt to ask awkward questions and to want some guarantee as to the effect and results of proposed arsenical treatment. One of the usual questions is, Is it quite safe, no risk, danger, or ill after-effects? Well, I take it that such a question requires a "qualified" answer. The next is, Can you assure me that the effect of the injection will be a permanent cure and that the disease will not break out again? Of course, one must answer that query according to one's experience *and conscience*. We know but little about the propagation or multiplication of the spirochæte within the human body, whether it does so, for certain, by fission or sporulation. Certain microphotographs would lead one to presume fission, others sporulation. However much we know about the effect of arsenic or mercury on the mature spirochæte, I do not think we can speak otherwise than theoretically as to their action upon the presumed embryo, the subsequent maturation of which is conceivably the explanation of a "relapse." It has been suggested

that one should give one or two intravenous injections of arsenic so as to clear off the existing spirochætæ and then to follow up with a more or less prolonged mercurial *régime*. But if mercury is really necessary to effect a cure, why not start with it and continue with it to the final medication of the case, and not subject the patient to even the small percentage of risk which would seem to attend the intravenous injection of arsenic for what seems to me to be a transient and somewhat problematical benefit?

I have no hesitation in saying that mercury when adequately and judiciously administered cures syphilis. I would think twice before making such a dogmatic statement in regard to arsenic. It would now appear that aural symptoms are not uncommonly met with during the early stages of syphilis, or rather since arsenic commenced to displace mercury in the treatment of the disease. I would like to apologise to the many students to whom I have taught the rudiments of syphilis for not having mentioned this seemingly common symptom, for the simple reason that I was unaware that it occurred.

I am, Sir, yours faithfully,

March 4th, 1912. CAMPBELL WILLIAMS.

THE SIGNIFICANCE OF THE SYMPTOMS IN CASES OF DUODENAL ULCER.

To the Editor of THE LANCET.

SIR,—I desire to point out that the explanation put forward by Mr. C. Mansell Moullin in THE LANCET of March 2nd of the group of symptoms which he associates with duodenal ulcer is really no explanation at all, and incidentally to protest against the tone of his references to the views held by physicians on this subject. He says: "It is not consistent with scientific work to assume that a thing does not exist because it has not yet been seen," but it is at least as unscientific to assume that a thing does exist until it has been seen. His contribution to the problem is that the symptoms hunger-pain, pyloric spasm, hæmorrhages, and hyperchlorhydria are caused by an intensely hyperæmic and hyperæsthetic state of the mucous membrane, and in illustration of this he actually cites the case of the interior of the stomach of Alexis St. Martin.

The description to which he refers was given by Beaumont as follows: "The inner surface of the stomach showed extensive erythematous livid patches, from the surface of which exuded small drops of grumous blood, large and numerous aphthous ulcers, the whole covered with thick mucus"; but if I am not misrepresenting Mr. Mansell Moullin in supposing that this is the condition to which he refers the symptoms just related, it is noteworthy that Beaumont expressly states that St. Martin suffered no pain and had a good appetite, so that in the one case to which Mr. Mansell Moullin appeals in which the alleged condition was present there were no such symptoms as those for which it is now given as the suggested explanation.

I am not one of those who regard hyperchlorhydria as a satisfactory explanation of hunger-pain, but I protest against Mr. Mansell Moullin's language where he suggests that it is used by physicians as "a long word which hides our ignorance from our patients," followed by the remark that "the days of the early Victorian physician have not gone by yet," although I confess I do not understand what he means by that, except by using the words "early Victorian" in the contemptuous sense in which we hear this qualification applied to dress and furniture of that period which does not happen to satisfy the modern taste.

I suffered from hunger-pain for almost the whole of the first half of my life; it had no relation to "cold" or catching cold, I never had "jaundice," I never suffered from "septic poisoning," I certainly had it in childhood and up to the age of 35 or 40. It was distinctly brought on by fatigue and by excitement; for example, in my early manhood I always had a bad attack after making a speech; it was relieved by alcohol, a circumstance that I discovered on one occasion, but having a horror of such a remedy I never repeated it; I could always relieve it by a small dose of morphia; it was also relieved by a large meal, but not by a small one; in fact, small quantities of food seemed often to make it worse. I was undoubtedly neurasthenic and often suffered from overwork, and to this alone I attribute the symptom. I call it gastralgia for want of a better name, and I think it is possible that Soupault was right in attributing the actual mechanism to a spasm of the pylorus, but I have no doubt of its essentially nervous origin, and I have treated many cases successfully on the principles suggested by my own condition.

As one who has welcomed the assistance of surgeons and has fully admitted the great advance in the treatment of stomach diseases which has followed from that assistance, I regret that any surgeon should allow himself to adopt such an arrogant attitude towards his medical colleagues as is displayed by Mr. Mansell Moullin.

I am, Sir, yours faithfully,

Birmingham, March 4th, 1912. ROBERT SAUNDBY.

OPERATION FOR PHLEBITIS WITH THROMBOSIS.

To the Editor of THE LANCET.

SIR,—I have read with interest Mr. Skene Keith's communication in THE LANCET of Feb. 3rd *re* the excision of thrombi in cases of phlebitis of the superficial veins of the lower extremities. I have had several cases where this operation has been done with excellent results and greatly to the gratification of the patients. All that is necessary is to make a skin incision over the inflamed and thrombosed segment of vein, tie above first and then below the thrombus, and dissect out the intervening diseased part. This can be done *cito, tuto, et jucunde* under local anæsthesia, saving much time, relieving pain, and preventing all risk of embolism.

In "Clinical Memoranda" (Baillière, 1909) I have written the following paragraph:—

> The treatment of phlebitis and thrombosis of the veins of the lower extremities by the "masterly inactivity" of rest in bed, and local applications, is not only intensely irksome to the patient, but is fraught with the danger of sudden death from pulmonary embolism. All danger is averted by, and a speedy recovery follows, the surgical treatment by excision of the affected veins at the earliest opportunity. Moderate inflammation is no bar to operation.

I am, Sir, yours faithfully,

A. T. BRAND, M.D., C.M.

Driffield, East Yorks, Feb. 27th, 1912.

THE BEARING OF SIR DAVID SEMPLE'S TETANUS RESEARCHES ON SURGERY.

To the Editor of THE LANCET.

SIR,—I have lately been discussing with a number of surgeons Sir David Semple's researches on Tetanus,[1] and have been rather surprised to find that they do not consider them to have any practical bearing on surgery. They do not think that he has sufficiently proved his case to cause us to consider the matter from a practical point of view. If any of these men had been unfortunate enough to have had a case of tetanus ensuing on a surgical operation, as I have had myself on two occasions (hernia), or after a hypodermic administration of remedies, perhaps they would be more disposed to consider the matter. To my mind Sir David Semple has proved his case. It is a far-reaching case; I regard it as one of the most important papers of modern times in its bearing on surgery, especially in India, where tetanus is very prevalent. (In all that follows I am not referring to tetanus following mill injuries and such accidents.)

A few years ago there was considerable correspondence in the British medical press *re* tetanus following surgical operations, especially hernia. There was no definite conclusion arrived at as to the causation, but there was a very definite impression that some cases at least could not be explained by direct infection of the wound (through ligature or so forth). I am personally satisfied that Sir David Semple's paper, though not written directly to bear on surgery, demonstrates the proximal cause of tetanus following surgical operations where infection from direct sources can be excluded.

I have seen two cases of tetanus myself follow hernia operations; the same ligatures, the same lotions, &c., and technique were used for these cases as were used on the same day in several other major operations, including another hernia without tetanus following, and the same

[1] See Scientific Memoirs of the Government of India, No. 43 THE LANCET, June 10th, 1911, p. 1589.

has been used from year to year by me without seeing a case of tetanus following in anything else. Several other men whom I know have had the same experience. I also know of two cases of tetanus following ligature of piles by two other careful men. I know of a recent case of tetanus following the strangulation of a nævus on the face with a ligature by a careful man, and I also know of tetanus in a hysterectomy case in the British Isles by a very careful and experienced operator, where there seemed absolutely no possibility of direct infection. The fact that many men have never seen a case of tetanus follow a surgical operation or the subcutaneous administration of quinine, and that it is very far from often following either, is no argument that it does not follow. We can never tell when it may follow. One case is quite enough; is too many if it can be avoided. I once came across a brilliant young surgeon who was unfortunate enough to have had one such case, and was struck by the fact that the idea of it had ruined his nerve, not unlikely for life. There are enough cases of tetanus recorded, and crowds of cases unrecorded, following surgical operations to justify us in seriously considering its proximate causes.

As far as I can judge from my own personal experience and from the experience of others, both recorded and unrecorded, I believe that tetanus follows on operation for hernia very much more frequently than on any other. Up to the present time tetanus following operation has been put to the charge of the surgeon. The implication has been that he introduced the tetanus through suture, lotions, dressings, instruments, sponges, or from his own hands or those of his assistants—not a very comforting reflection for the surgeon. Why should this tetanus occur in spite of the utmost care on the part of the surgeon? I believe that the reason is explained by Sir David Semple's paper. An anaerobic area has been left—the *sine quâ non* for the development of tetanus from tetanus spores. Sir David Semple has shown that the spores of tetanus are frequently present in the human intestine. He has shown that when tetanus spores are injected into a given area of a guinea-pig and quinine injected into a distant area of the same guinea-pig, tetanus bacilli are to be found in the anaerobic slough produced by the quinine and nowhere else, and that a control guinea-pig which has similarly received an equal number of spores, but has not received any quinine, is not affected by tetanus.[2] How do the spores reach the anaerobic area in this case? I can only understand it by some of them travelling through the blood circuit and eventually becoming stranded in the area of dead anaerobic tissue, where they develop into toxin-producing tetanus bacilli. In the case of hernia the intestine, which may contain tetanus spores, has lain stationary in the hernial sac. May tetanus spores not migrate into that sac? The time-honoured operations for hernia imply a ligature of the sac, and excision of a portion of it distal to the ligature which leaves an anaerobic hernial stump. This may have in it migrated tetanus spores, or tetanus spores may be brought to it by the blood circuit. Since reading Sir David Semple's paper I have modified my treatment of the sac so as to avoid leaving an anaerobic stump. I draw down the sac, catch it as high up as possible with an intestinal forceps, cut it off below the forceps, fix a catgut suture at one end of the sac behind the forceps, and run a glover's suture from the fixed point through the sac and over the forceps, not tightening it until it is all inserted. I then open the forceps with the loose suture over them and insert a stout long probe between the blades and withdraw the forceps. With the assistance of the probe we can with a dissecting forceps draw the sutures tight, drawing out the probe as we go along. With the probe we put the stitches on the stretch, and hence we can find them easily to tighten them. I now return the stitched-up opening, and dispose of the opening in the abdominal wall in the usual way. This procedure is simple; it is as effective as any of the anaerobic stump methods, and it is an attempt to render tetanus after hernia as rare as it is after other surgical operations.

A ligatured pile is an anaerobic stump in the vicinity of tetanus spores. How are we to avoid tetanus in this case? Cut off the piles and stitch up the wound, or do a Whitehead's operation, or if we decide to ligature, then give the patient a dose of tetanus antitoxin. I have never had a case following piles, but I have only once ligatured a pile. It is not to be assumed that the policy which I advocate is a policy leading to laxity in our technique. A recent writer in the *Indian Medical Gazette* seemed to lament that the establishment of Sir David Semple's case would lead to this result. We have to deal with quite enough other germs to cause us to be as careful in our technique as if tetanus did not exist.

The records of my hospital show that tetanus frequently follows on mill injuries, often to all appearance injuries above suspicion. There are here on an average 20 to 30 such cases in the year. For over two years we have administered a dose of tetanus antitoxin to every such case on admission to hospital. There has been one case of tetanus developed in this hospital during these two years in such cases. That case came in nine days after the injury, and my assistant had used his judgment and considered antitoxin unnecessary, and hence did not use it. I add this paragraph to show the importance of the use of tetanus antitoxin as a preventive in such cases. As a curative agent, when symptoms of tetanus have developed, I have found it absolutely useless.—I am, Sir, yours faithfully,

HENRY SMITH, V.H.S.,
Lieutenant-Colonel, I.M.S.

Amritsur, India, Feb. 15th, 1912.

[2] A growth of tetanus bacilli can be obtained by making anaerobic cultivation from the tissues at the seat of injection of the spores in both cases, and there is a growth of tetanus bacilli at the seat of injection of quinine in the quinine case.

THE COLOUR SENSE IN RELATION TO THE EMOTIONS.

To the Editor of THE LANCET.

SIR,—The effect upon the pulse-beat of a slight emotion may be illustrated from the examination of a candidate for admission to the railway service of New South Wales. The degree of emotion varies with the type of applicant. In one man there is great anxiety to obtain a position, in another comparative indifference to the result. One man is stable, another is neurotic. The degree of appeal in a railway fettler under examination for permanent employment in the railway service varies less than in any other class. This man belongs to a rapidly disappearing class, a large majority of whom were born and reared in the country districts by poor hard-working parents. They are as a rule big muscular healthy men of stable type, in many ways childlike, and more than usually honest. A neurotic railway fettler is rare. A casual observer would regard him as being mentally dull, but a true valuation is that within its limited orbit of observation and experience the mind is sound in judgment.

The appeal to a colour-blind fettler is direct to the mind, his face shows no indication of emotional response. This is very marked during his selection of the wools. When spoken to his voice is monotonous in tone, and still more so when attempting to name the colours in the lantern, when he frequently hesitates and pauses before answering. On the other hand, a fettler with a good colour sense never hesitates or pauses when he is naming the colours in the lantern; in his case there is no evidence that he requires assistance from the mind. During the examination by the wools the fettler with a normal colour sense frequently shows a slight degree of excitement, his hand may shake, and when examined physically there is frequently an increase in his pulse beat. This condition is transient and may disappear before the examination is finished. When the mind of a fettler realises that he has a defect which unfits him for the service he looks depressed, but if he is a colour-blind person there has been none of the preliminary excitement frequently seen in a person with a good colour sense. Under these conditions the depression appears to persist longer in a colour-blind person than in one with a keen colour sense, and to be more sombre and uniform in its mood.

One type of candidate drawn generally from the city is not satisfactory to deal with from the standard of emotional appeals. A number are neurotic, a class I endeavour to exclude from the running lines of the railway service. A dilated pupil, tremulous hand, rapid pulse, &c., frequently indicate the habits of a degenerate. A mind with experience will endeavour to exclude such persons.

I am, Sir, yours faithfully,

GEORGE HENRY TAYLOR,
Railway Medical Officer, New South Wales.

Sydney, Jan. 2nd, 1912.

THE INTESTINAL FLORA.

To the Editor of THE LANCET.

SIR,—Under the above title Dr. A. Distaso gives in your issue of Feb. 24th what he describes as a "brief summary of the results of my researches, the details of which will appear soon *in extenso*." I have been much interested of late years in the subject of the possible causation of some kinds of mental disorder, or of phases of such, through the absorption into the circulation of toxic material from the intestinal contents. I am therefore looking forward with interest to the detailed account of his researches which Dr. Distaso foreshadows. He will probably give in this the evidence for certain statements which appear in the summary just published. The inference from this observation is that he has as yet given no evidence for them; and this is precisely what I desire to affirm. I would call the attention of your readers, and of Dr. Distaso, to the following weighty statements which he makes without, in my judgment, adducing any evidence:—

The flora of the normal adult ..... is certainly harmful, and, far from defending the organism against infection, it may be said to help it (*sic*).

In the colon indol and other bodies belonging to the heterocyclic and aromatic series are elaborated and absorbed. These bodies, when absorbed, severely tax the functions of the body and therefore of the liver. This fact may throw some light on the etiology of diseases of the liver. [What "fact" is referred to?]

Not only is there intoxication by the products of bacterial growth, but the disappearance of the bacteria indicates a process of autolysis, the products of which when absorbed cannot fail to be harmful.

Constipation and the resulting intoxication are caused by the intestinal flora. [It is apparently taken for granted that all chemical changes in the intestinal contents which result in the production of toxin are due to bacteria.]

Doubtless the products of the intestinal bacteria, by increasing secretions inhibiting the submucous plexuses, give rise to stasis.

I am, Sir, yours faithfully,
EDWIN GOODALL.

City of Cardiff Mental Hospital, Feb. 27th, 1912.

ELECTRIC METALLIC COLLOIDS AND THEIR THERAPEUTICAL APPLICATIONS.

To the Editor of THE LANCET.

SIR,—My attention has just been called to a communication in your issue of Feb. 3rd, over the signature of Mr. C. E. A. MacLeod, bearing on my article on the electric colloids of Jan. 13th.

Nothing was farther from my intention than to call in question the efficacy of the "collosols," and if I did not refer to them by name this was due to the fact that, as the writer himself admits, their introduction into therapeutics is so recent that sufficient time has not elapsed for it to have been possible to subject them to adequate clinical trial. The employment of colloids in therapeutics is by no means a new thing, for it is many years since the attention of the profession was first called thereto, and electrargol, with which most of my personal observations were made, has been tried on such an extensive scale that each one of its indications is established by a large number of published reports.

Then, too, as far as I can gather from the somewhat scanty references given by Mr. MacLeod, the "collosols" do not appear to have been employed for the same purposes as the electric colloids. As a matter of fact, the writer of the letter in question only mentions a certain number of local applications, and he barely touches the constitutional applications which have conquered for electrargol a place in contemporaneous therapeutics (pneumonia, broncho-pneumonia, influenza, suppurative infections, cholera, puerperal fever, eruptive fevers, &c.).

With regard to stability, I do not wish to call in question that of the "collosols," but this does not impugn the fact that the stability of the electric colloids has been practically demonstrated many years since. I mention this merely to show that in therapeutics each preparation must stand on its own merits, and must establish its own indications for use. The electric colloids have rendered great service to a large number of practitioners other than myself, but I feel justified in stating that the results obtained are their individual attributes, and in the absence of specific confirmation cannot safely be assumed to be possessed by other varieties of colloids. I am, Sir, yours faithfully,

Paris, Feb. 28th, 1912. B. G. DUHAMEL, M.D.

THE TREATMENT OF TUBERCULOSIS AND THE SANATORIUM QUESTION.

To the Editor of THE LANCET.

SIR,—It is a thousand pities that "F.R.C.P." should stir up strife in the medical profession by his remarks as to the constitution of the advisory committee on tuberculosis. Although one regrets the absence of certain names, every member of this committee is well known and distinguished for work done (and well done) in this department of preventive medicine; and the inclusion of a few more specialists or general practitioners would not have added appreciably to the strength of the committee.

From the remarks made by "F.R.C.P." on sanatoriums one would imagine that they were opposed to dispensaries instead of supplementing and completing their work. Even supposing that every case can be cured by tuberculin at a dispensary (which most authorities on tuberculin treatment would not admit) we still have to deal with the (mostly hygienic) causes leading to the tuberculous illness, which cannot often be done in working-class households without at least some training in a sanatorium. Example is always more powerful than precept, and the habits of a lifetime are more easily changed when the value of the change is demonstrated at a sanatorium. Moreover, no man in his senses would treat a febrile consumptive with tuberculin as an outpatient or in a working-class home if better conditions were available. It is the febrile consumptive who has to be treated as a rule, and no arrangements are adequate which leave this fact out of consideration.

Further, recovery from pulmonary tuberculous illness, *however treated*, is conditional; if habits and conditions of life are unsatisfactory relapse or reinfection usually takes place sooner or later. Not every tuberculous person needs treatment. Many such go through life without tuberculous illness; but if a tuberculous person has more than a very limited quiescent lesion, if the bodily health is in any way affected by the tuberculous focus, and if his habits or conditions of life are unsatisfactory, he is in danger of a breakdown and requires treatment, directed not only against the tubercle as such, but against all other contributory causes. We need open-air schools, training in domestic hygiene, better housing, early diagnosis based upon physical examination in addition to the tuberculin test, systematic treatment by hygienic means as well as by tuberculin and other remedies, and adequate measures for after-care in the shape of hygienic homes, day and night camps, and the like. For such a programme we need the open-air school, the dispensary, the sanatorium, hospital, or home, the health colony or camp; and we need them all. I am, Sir, yours faithfully,

Farnham, March 2nd, 1912. F. R. WALTERS.

CYSTITIS AND URINARY ANTISEPTICS.

To the Editor of THE LANCET.

SIR,—I have been much interested in the two exceedingly able and full articles on "Cystitis" by Dr. David Newman which have appeared in your recent issues. There are, however, certain small points with reference to the action of urinary antiseptics in the second paper on treatment, which are so entirely at variance with the conclusions that I have formed on the matter that I cannot forbear criticism. I have been doing experimental work on this subject for some time (the results of much of which will be found in the *Bio-Chemical Journal*, Vol. V., Nos. 6 and 7, and in the most recent Transactions of the Section of Pharmacology of the Royal Society of Medicine), and this is my excuse for discussing a subject where Dr. Newman's clinical experience is so incomparably greater than mine. Dr. Newman states, in referring to the giving of urotropine and helmitol in cases of mild B. coli infections, that "in cases where the urine is acid, as in B. coli infections, formalin is liberated from these preparations and creates irritation, but if the urine be rendered neutral or alkaline by potash or lithia salts this difficulty is overcome." These words appear to me to imply that Dr. Newman considers that the liberation of formaldehyde by acid urine from urotropine is in the nature of an incident, not desirable in itself, and which it may be desirable to prevent. As a matter of fact, there is, I think,

not the slightest doubt that these drugs act slowly by the liberation of formaldehyde and are not in themselves antiseptic. This liberation, as Dr. Newman says, only takes place in an acid medium, and, in consequence, to render the urine alkaline is to render urotropine or helmitol of no effect, and they may just as well not be given. Further on, under the heading "Chronic Cystitis," the statement is made: "When the urine is acid, alkalies and alkaline salts are indicated." This is a generalisation of the statement, so often made, that in B. coli infections the urine should be rendered alkaline, because alkaline urine inhibits organisms of this class. This inhibitory power exists, but it is comparatively slight and is negligible compared with the very great antiseptic power against B. coli of an acid urine *plus* urotropine, so that I am decidedly of opinion that in these infections the aim should be to increase the urinary acidity as much as can be tolerated by the patient giving urotropine in conjunction; and, in the few cases in which I have been able to apply this principle, the results have borne it out. In conclusion, I should like to say how pleased I have been to read Dr. Newman's praise of boric acid given by the mouth as a urinary antiseptic, since I have found that in laboratory experiments, at any rate, it is quite efficient, and is, indeed, the only efficient drug in alkaline urine, while its use as a urinary antiseptic at all is by no means generally recognised.

I am, Sir, yours faithfully,

ANSON JORDAN, M.D., F.R.C.S.

Cambridge, March 5th, 1912.

ANCIENT EGYPTIAN SPECIALISTS.

To the Editor of THE LANCET.

SIR,—In an interesting annotation in this week's LANCET entitled "The Story of Ancient Medicine revealed by Greek Inscriptions," you say quite rightly: "The life-history of the ancients can no longer be adequately written by confining research to the classic authors." I am not sure, however, that even these writers have been completely exhausted. Take, for instance, the side-light which Herodotus, the father of history, throws casually on the above subject in his history of the Persian war: *ἡ δε ἰητρικὴ κατὰ τάδε σφι δέδασται· μιῆς νούσου ἕκαστος ἰητρός ἐστι καὶ οὐ πλεόνων. πάντα δ' ἰητρῶν ἐστὶ πλέα· οἱ μὲν γάρ ὀφθαλμῶν ἰητροὶ κατεστέασι, οἱ δὲ κεφαλῆς, οἱ δὲ ὀδόντων, οἱ δὲ τῶν κατὰ νηδύν, οἱ δὲ τῶν ἀφανέων νούσων* (B, 84).

I particularly appreciate those experts *τῶν ἀφανέων νούσων*. I wonder what diagnoses they made!

I am, Sir, yours faithfully,

Hove, March 2nd, 1912. W. AINSLIE HOLLIS.

MEDICAL MEN AND CERTIFICATES: A TEST CASE.

To the Editor of THE LANCET.

SIR,—A test case which I recently took into the petty sessions at Petersfield, and won, may prove of interest to the medical profession. A child of poor parents was under my care for some months and was unfit to attend school. The education authority demanded a medical certificate. Now I maintain that such certificates have a certain value, and therefore either the authority or the parents must pay for them. But one cannot ask the parents to pay, at any rate in these poor agricultural districts. So I always refuse a certificate unless the authority will pay a fee, and have steadily done so for the nine years I have been in practice. Of course, I originally ascertained that legally the authority had not the power to insist on a certificate; and for nine years they have not attempted to prosecute in these circumstances. This time, however, they did. I had persuaded the parents to let me see the case through at my own expense. I instructed a solicitor, Mr. Percy Burley, of Petersfield, and gave evidence myself, and the education authority had no case at all, although the magistrates could not see their way to grant any costs. The attendance officer who prosecuted owned that he was told by his superiors at Winchester to go right through with the matter because they knew it was practically a test case. I carried it through as a question of principle. We medical men, in the country at any rate, are expected to write certificates for school boards, juries, &c., without fee, and often without the barest thanks.

I am, Sir, yours faithfully,

East Meon, Hants, March 2nd, 1912. EDWARD T. JONES.

COMPULSORY NECROPSIES.

To the Editor of THE LANCET.

SIR,—The time is rapidly coming when no practitioner should be allowed to certify a "cause of death" not verified by post-mortem examination. The Insurance Act will spend millions on the prevention of untimely death—but we really do not know what people die of. I am an ordinary practitioner; I find I have signed in my time about 1200 certificates of "cause of death," yet not in a dozen cases was there a necropsy, and I may have been mistaken 90 per cent. of the times.

Now the Registrar-General's returns of the "causes of death" are simply made up of my cases and the similar cases of other practitioners possibly more ignorant than myself. Of what scientific value can they be?

I am, Sir, yours faithfully,

J. C. MCWALTER, M.A., LL.B., D.P.H.

Dublin, March 4th, 1912.

THE WORK OF A MEDICAL MISSIONARY IN CHINA.

(FROM A CORRESPONDENT.)

AT the request of the special correspondent of THE LANCET in China I am permitted to give a very rough sketch of the work of a single medical missionary from the professional point of view only. It is the rule of the Church Missionary Society to station at least two medical missionaries at each station; unfortunately, the supply does not keep pace with the demand, and during the last six years, to which the following brief notes apply, I have been alone professionally with but few exceptions. In this statement I do not refer to those Chinese assistants who are able to do some parts of the manifold variety of duties connected with the carrying on of a hospital of some 60 beds, annually treating some 600 in-patients and 11,000 out-patients, male and female.

Nature of Work.

In this connexion I would deprecate the idea that statistics convey a real idea of the quality of the work done; they may become a source of real danger to medical missionaries, and the public who support this sort of work are to some extent responsible when they compare one set of figures with another, not knowing the circumstances under which work is done. For example, one man (with great self-control) confined his first few years in the work to the surgery of circumcisions, sebaceous cysts, and the like; the result was an infinitesimal death-rate and the object at which he aimed, the confidence of the Chinese. Another to my intimate knowledge has never refused to operate upon any case brought to him with any hope of cure; and many a sigh of private professional relief has he breathed when even this "fighting chance" has been refused; but the death-rates of the two surgeons should not be compared.

Considering this small hospital at Ningpo as a type of many, the class of work done will show to friends at home the importance of having an all-round training and the faculty of adaptability. One has to try to combine the offices of surgeon and physician, general practitioner and consultant, pathologist and bacteriologist, X ray expert and general mechanician when apparatus breaks down, general superintendent and ofttimes nurse, architect, and builder; and added to these usually the duty falls to one of trying to raise the money with which to carry on the work of helping the helpless.

Many a practitioner at home struggling against competition may well envy the medical missionary with his sphere of work. In these few remarks I shall confine myself as far as possible to the surgical aspects of our mission work, and I trust that no one will misunderstand when the other side of our Divine commission, "to preach the good news and heal the sick," is passed over in this article.

During the past six years, then, approximately there have been 3400 in-patients and 59,000 out-patients. Operations under general anæsthesia more than 1100. Minor operations under cocaine, eucaine, &c., eye operations more than 1400.

Malignant Disease (52 Cases).

Of these 52 cases, 42 were confirmed by microscopic sections; 28 were epiblastic in origin and 24 mesoblastic; 28 were in males, 24 in females. Three were fatal whilst in the wards, in each case put down to shock of operation—(*a*) sarcoma of the kidney, female, aged 46; weight, 6½ lb.; (*b*) fibro-sarcoma of the uterus, female, aged 39; weight, 20 lb.; (*c*) osteo-sarcoma of the rib, male, aged 51; weight, 8 lb.

Malignant disease in our practice means that the patient has gone the round of the native doctors, each of whom has probably guaranteed a cure for varying sums of money, and in addition probably the local deities have been called upon to assist—again for a monetary consideration to the priests. Finally, when ulceration or glandular infection has set in, the foreign doctor is consulted.

In this connexion I might mention that there is one particular shrine near Ningpo to which patients are taken, and so far as I have gathered from the Chinese its chief claim for distinction lies in the fact that several hundred years ago a celebrated physician lived there who took more liquor than was good for him, and in that condition he fell into a pond and was drowned. Hence the sanctity and healing virtue of the shrine.

Our oldest case was 84, with squamous-celled epithelioma of cheek, and the youngest 7, with mixed-celled sarcoma of lower jaw. Like others at home, we have experienced the pleasure of seeing an inoperable, clinically and microscopically, malignant tumour disappear. The patient was a middle-aged woman, and the whole of the lower half of the abdomen was occupied by a solid tumour, which on opening the peritoneal cavity was found to have invaded almost every organ in the neighbourhood, and even the abdominal wall could be seen to be infiltrated by the growth. The actual original focus I could not settle, but it seemed to spring from the left uterine appendages. I sutured the abdominal wall, and explained that the tumour could not be removed, and that there was no hope of recovery. Sections of the growth invading the abdominal wall were made, and were thought to be endotheliomatous. From the day of operation improvement set in, and all the classical symptoms pointing to presence of malignant disease disappeared. When seen nine months later only a slight thickening in the left iliac fossa was palpable, and five years later she was still quite well.

One of my early cases of malignant disease (*not* included in statistics) was a cat, aged 17, the faithful friend of a clerical colleague. After removing a typical carcinomatous breast recurrence followed, and I was impelled to destroy it. My Chinese assistants could not understand our desire to save the life of a beast. Since, then, however, we have been consulted in the matter of both dogs and cows!

Amputations (125).

These are, unfortunately, common. When foreign fashions, such as railway travelling, come in these will be immensely increased. Utter carelessness is the feature of those in the local cotton mills; no factory precautions are enforced—they have not yet been thought necessary. One man was brought to us with an arm almost severed, and not any attempt at first aid had been given; he died before we could do anything, having been bleeding probably quite an hour. Total number of amputations, 125. Of these, 1 through hip-joint, 11 through the thigh, and more than 40 through different parts of the leg or foot. Amputations of the upper extremity, 11.

Several times *double* amputations were performed, in no case fatal. In one case of double gangrene in a woman with advanced cardiac and renal disease, and a history of lingering agony with battalions of blue-bottle larvæ occupying every position in the gangrenous limbs, we felt that there might be some slight hope in amputation if the anæsthetic were possible. We have had no experience of spinal analgesia, and so, after injecting 1 c.c. of Burroughs, Wellcome, and Co.'s pituitary gland extract, we amputated both legs through the knee-joint; including anæsthetising, operating, and bandaging we spent just 20 minutes, my Chinese colleague completing his work about a minute before I did. However, his flaps in the end continued to discharge serous fluid long after mine had healed. In this case I used the opportunity of a control amputation by my Chinese colleague (under the usual precautions of a thorough hand cleansing) and deliberately omitted to wash *my* hands. I immersed them for ten minutes in biniodide of mercury in rectified spirit 1 in 1000. The woman made a good recovery, and the occasionally marvellous effect of pituitary gland injections in combating shock was shown by the fact that the pulse was far better after than before the double amputation under chloroform—our routine anæsthetic.

Of cases urgently needing amputation quite as many patients refuse as consent to undergo an operation; probably more; the reason alleged is that in the spirit world the absence of a limb is a terrible calamity. It is for a similar reason that to be decapitated is reckoned by Chinese a far more severe punishment than all others, but even this may be got over (like most things in China) for an expenditure of money. In the neighbourhood of Ningpo a powerful and rich man some hundreds of years ago displeased the Emperor, was beheaded, and was buried; but the relatives made some *ten* huge graves, killing off thousands of stonemasons to preserve the secret as to which of the ten was the one occupied by the unfortunate man without a head, the reason being that (it is said) a false head of pure gold was fixed up, which would certainly deceive everyone in the spirit world, just as surely as gold works wonders in this present age.

Bone Operations (197).

Excisions of hip joint 3, elbow 5, shoulder 2, maxillary articulation 2. Necrosis of bone is one of the commonest surgical complaints in this part of China; the lower end of the femur very common.

Hæmorrhoids, Fistula in Ano, &c. (127).

Clamp and cautery the routine treatment, though occasionally Whitehead's operation, especially useful in cases of prolapse of rectum of many years' standing, such as would seldom be seen at home. We use the "locking up" of the bowels method, so emphatically condemned by some, but none the less efficacious in our experience; a morphia (¼ gr.) suppository is always inserted after operation, and the third day a saline purge is given.

Eye Operations (Iridectomies, 44; Cataracts, 17; Excisions of Eye, 12; Hypopyon, 11).

It is remarkable to note the comparative infrequency of cataract operations as seen in *this* part of China.

Operations for entropion and ectropion average some 40 per annum. The Streatfield-Snellen operation is the one preferred. One feature of excision of the eyeball is absent in similar cases at home; I refer to the public handing over of the eye to the immediate relatives of the patient. So many wild rumours are in constant circulation, that to show the credulous Chinese that we do not make medicine of the eyes of our patients we always return them their property in full view of all, but still, probably, they will credit us with the practice.

Gynæcological.

The less said about this branch of the work the better. We are scarcely ever called in till decomposition of the fœtus is in progress, the old women midwives having done their worst. We do not make a feature of this work, but out of 64 cases it is interesting to note that *only 14 were normal*. There were 6 maternal deaths. There were 11 cases of transverse presentation with either tonic contraction of the uterus or septic decomposition of the contents; of these 1 child only was saved. Decapitation is usually our procedure, but so far from it being easy we have found it extremely difficult, so acute is the flexion of the child and so firm the grip of the uterine muscle. Usually for days after such a case one's fingers have but small power.

There were 4 cases of eclampsia, 3 of placenta prævia, 1 of hydrocephalus, 1 of face and 1 of unreduced occipito-posterior presentation. Chinese midwifery as we have met it is awful in its simplicity; it consists usually in letting the patient die if normal delivery is not possible. One case treated in our wards was that of a woman from whose uterus we removed the remains of an "aftercoming head" 38 days after the remainder of the body had been wrenched away by Chinese midwives; the base had disappeared but the remainder was removed and the patient recovered rapidly.

Glands of Neck, Axilla, &c. (89 Cases).

To get a case before suppuration and periadenitis has set in is not common. Hence the operation usually is one requiring long dissection and deep.

Abdominal Sections (34, with 9 Deaths).

These are rare events in China so far. Before the period in which these occurred, only one, I believe, had been performed in this city of 400,000 inhabitants, and it should be noted that 7 were done during the first three years and 27 during the last three. Refusals of leave to operate are almost daily met. Liver abscesses were 7, 4 amœbic and 3 mixed infections. Spleen abscesses were 2, both staphylococcal.

In these cases I have used siphon-drainage habitually, an interrupted rubber drainage-tube passing into a vessel under the bed containing a measured amount of 1 in 40 carbolic acid lotion. The benefit to both patient and surgeon is enormous; the value of Leonard Rogers's work on this subject is very great. Two features strike me as of importance in this matter: the surgeon knows just how much pus is passing out and when blocking occurs, and the patient is convinced (though in suspicious China) that there was some necessity for the operation after all, seeing the daily siphonage of pus. Of the value of the method towards keeping the cavity in the liver sterile no one should need convincing. Two cases were fatal, both from complications. The largest amount removed was 140 ounces from the right lobe of the only woman patient I have treated for this condition. She was, with one exception only, the most morose and suspicious patient I have met, but six months after operation she came to see me an utterly different woman, physically and mentally and morally.

In these few years the feeling of the Chinese that the abdomen was not meant for the surgeon has been passing away, but probably few surgeons at home can point to a consecutive series of seven advanced ovarian cysts in one year, each refusing to allow operation. The commonest condition I have met is that of fæcal fistulæ, generally the result of strangulated herniæ; occasionally with a traumatic origin, as in one case where a bullet smashed up the last few ribs and ploughed a furrow in the splenic flexure of the colon, leading to a chronic fæcal fistula which showed no tendency to close. The colon was found to have a fair mesentery and was sutured successfully.

A thing which has struck me as unusual is the frequency of chronic intussusception in the adult; whether diet enters into its causation I cannot say. The symptoms sometimes seem to be very slightly marked except in the later stages, and in one case quite recently we watched the tumour migrate successively from the right iliac fossa to the hepatic region and onwards. The case was typical, but the patient refused permission to operate. The same sad features occurred in another more acute case, when the tumour was actually seen to project from the anus; the patient died a few days later. One woman allowed me to do an abdominal section for this condition, and it was of the cæco-colic variety. Reduction was possible and a tumour of the caput cæci was found and removed together with the appendix and portion of the cæcum. She recovered rapidly. The tumour was of the size of half a walnut roughly, and was non-malignant. This patient was very strong-minded, desiring surgical help against the wishes of her relatives.

Ovarian tumours are commonly met, and only three have been removed—two ordinary multiloculars and one dermoid complicated with an abscess in the broad ligament containing gonococci. This last case died from lobar pneumonia on the third day, with no abdominal symptoms. Only three appendix cases have been operated upon out of the three or four met yearly. The comparative rarity in Ningpo seems striking. Two of these three had abscesses and the third was a case of advanced gangrene; the latter died.

One of the most interesting from a bacteriological standpoint was an abdominal abscess caused by a streptothrix of an unknown variety. It probably commenced in the appendix region, and was opened in the left iliac fossa. The case was published at the time in the *China Medical Journal*.

Other Operations.

Miscellaneous operations included three upon the œsophagus in two of which X rays were of great help in localising. A Chinese-made false tooth-plate with one tooth, and numerous jagged edges, was swallowed during sleep by a man. We did a tracheotomy to relieve dyspnœa, and finally cut down on to the œsophagus between the left lobe of the thyroid and the sterno-mastoid and removed it entire. The material of which it was made and the fact that ulceration was present might have made removal by the mouth impossible except by experts. In any case both this and the case of a long needle swallowed in the rice bowl recovered. The third was a lad with an œsophageal fistula about an inch above the clavicular insertion of the sterno-mastoid. Possibly this was congenital in origin, as he had had it as long as he could remember. Milk taken by the mouth flowed out at once. We excised about 1½ inches and ligatured the remaining portion with catgut, and it healed over at once.

One dorsal laminectomy for tubercular disease causing sudden paraplegia in a young man gave great benefit, but only for a few weeks. Incidentally we may mention that the patient ripped off all his dressings the day after operation, and the wound was caused to gape open.

In our work we must not be surprised at meeting strange experiences. One excision of the breast for carcinoma comes to my memory when I actually found the woman expectorating on to the lines of suture, having taken off the dressings. The case healed by first intention, but hardly in consequence of the extra lavage.

Elephantiasis is of very common occurrence amongst the "farm labourers," and in two instances I have done Handley's operation of lymphangioplasty. The effect on the first was marvellous in the diminution of the hypertrophied tissues and the healing of a huge chronic ulcer, but I am bound to say that from this limited experience I am not a believer in its value for elephantoid legs in Chinese coolies. The value of the operation will probably be found when gravity assists rather than hinders the capillary action of the embedded silk threads. Whether the great amount of elephantiasis in this region and the comparative *absence* of filariasis in the general population are related to one another in any way needs to be worked out. In 120 consecutive examinations of night-taken blood from hospital patients (20 c.mm.) the filaria was found in but one, and he came from a place 200 miles to the south of us.

No less than seven cases of congenital absence of the anus were seen, the eldest being five days old. Every single one was a male, and the reason for the sex being so uniform is suggested by the remark of one parent, "If it were not a boy we would not have troubled to bring him." Infanticide of girls is not yet a thing of the past in some parts of China. We saw eight cases of cancrum oris, all fatal, and usually seen when the cheek has been extensively destroyed. The bacteriology is not yet clear. Arguing by analogy from two cases recently seen, the possibility of a spirillar origin with other organisms living symbiotically should be investigated. Vincent's fuso-spirillar symbiosis I have demonstrated in two cases, one of recurring gangrene of the toes, and one a peculiar subacute gangrene of the penis, *not* syphilitic in origin in all probability. Gunshot wounds call for no special mention, but the variety of missiles in shape and material is fairly great. A large portion of our work consists in trying to undo the effects of the surgery of the Chinese; in particular the use of a septic needle habitually plunged into anatomical situations, usually considered dangerous by us from the West, gives us plenty of septic joints, for example. The knee-joint on four occasions was certainly thus infected, and in five others almost certainly so.

There should be a great future before vaccine therapy, for the average Chinaman most certainly believes in the needle. A mere catalogue of one's surgical operations in a small hospital is of slight value in itself, but this account has been written with the hope that the work of the ordinary medical missionary being of a varied and somewhat important nature from the physical aspect alone, the sympathy of one's professional brethren at home may be possible; and this can only be when they realise the nature of our work, such as these brief notes have aimed at giving.

KING'S COLLEGE HOSPITAL.—At the annual court of the corporation, held on Feb. 29th, Mr. Herbert Haynes Twining was elected treasurer of the hospital in succession to Mr. Charles Awdry.

PLAGUE IN RUSSIA AND THE NEAR EAST.

(FROM THE BRITISH DELEGATE TO THE CONSTANTINOPLE BOARD OF HEALTH.)

Plague in the Kirghiz Steppes.

THE centres of endemic plague in the southern steppes of Russia, Asiatic and European, continue to show considerable activity. The published records of the different outbreaks are incomplete, but from paragraphs appearing in the Russian medical journals and from communications made by the Russian delegate to the Constantinople Board of Health the following facts may be gathered. During the latter portion of the year 1911 plague outbreaks of greater or less extent occurred in various Kirghiz settlements in the governments of Astrakhan, Uralsk, and Semirétchinsk. The area covered by these three governments is a very large one; the latter two are in Asia and the first is in Europe. It is particularly in the steppes of the Astrakhan government that plague has recently been most active; in the other two it has been confined to few and relatively small outbreaks.

In the Semirétchinsk government, which is situated close to the Mongolian frontier and to the north of Kashgar, plague appeared on August 31st (Old Style) in the *urotchishché* (Kirghiz settlement) of Akskoé, in the *volost* of Tcherikof. By Sept. 4th there had been 4 cases, all fatal, of pneumonic plague. A later telegram, from Prjevalsk, dated Sept. 14th, reported 8 fatal cases of the same disease in the above-mentioned *volost*, at a spot near Naryn (in the Prjevalsk district of the Atbashinsk region); it is probable that this was one and the same epidemic. Two more deaths occurred here on Sept. 16th, including that of a mollah who had washed and buried the bodies of some of the earlier victims. By Sept. 20th the epidemic here was declared to be at an end.

In the Uralsk government, situated much more to the west and adjoining the Astrakhan government, 5 deaths from pneumonic plague occurred in the Uletinsk *volost* before August 10th. In the same district, in the "9th *aoul*" (or Turkoman settlement), near Djambent, 8 fatal cases of pneumonic plague were recorded between June 29th and August 8th. In the Tchadyrtinsk *volost* of the same government 8 cases and 3 deaths from plague of the "pneumonic and abdominal forms" occurred before Sept. 10th, followed by 1 death on the 12th and 1 fatal case on the 13th. Another case occurred in another settlement 5 versts away, and the totals by Sept. 16th had reached 10 cases and 6 deaths.

In the Astrakhan government plague was epidemic in the *urotchishché* of Saganai from the end of August to the middle of September; a score or more cases occurred here. On Sept. 21st the disease became epidemic in several other centres. The following table is a summary of the later returns:—

Period.	No. of infected centres.	Cases.	Deaths.
Sept. 21st to Nov. 7th	16	73	63
,, ,, ,, ,, 21st	28	120	102
,, ,, ,, ,, 28th	33	139	119
,, ,, ,, Dec. 19th	38	187	166
,, ,, ,, ,, 26th	43	201	180

The infected centres were situated principally, if not entirely, in the Narynsk, the Kamysh-Samara, and the Primorskaia (or maritime) divisions of the Astrakhan steppes. The disease was most active in the Ak-tchagyl settlement (15 versts from the above-named Saganai), and in those of Sartubé, Kudanysh, Djapalatka, and Antantchagyl. Elsewhere but few cases or deaths occurred in any single centre. While many of the outbreaks were pneumonic in character, this was not invariably the case.

In the Russian medical journal, the *Vratch*, No. 35, of August 27th last, an article of considerable interest upon plague in the Kirghiz steppes was published by Dr. Koltsof, a member of the medical mission sent by the Russian Government last summer to deal with these outbreaks. The article is mainly confined to an account of the epidemic occurring in the steppes between May 6th and July 19th of last year, when 33 cases and 32 deaths from plague were recorded in 9 centres; but it also contains a summary of the epidemics in the Bukeëf Horde of the Kirghiz steppes of the Astrakhan government during the preceding 12 years. The summary is limited to this particular region of the steppes. It may be held to supplement the list of epidemics given in my article upon "Some Hitherto Unknown Centres of Epidemic Plague in the Kirghiz Steppes," published in THE LANCET of April 24th, 1909. According to Dr. Koltsof's observations, the disease generally, but not always, gives rise to two annual epidemics in the infected centres, one in summer the other in winter. Working backwards from last year, he finds the following outbreaks recorded.

In 1910 the winter epidemic ended on Feb. 22nd, and the summer one began on June 15th. In 1909 there was no summer outbreak; the winter outbreak began at the end of October, and continued until February, 1910. In 1908 there was only a summer epidemic, lasting from July 7th to August 3rd. In 1907 the summer epidemic began on July 26th, the winter one on Oct. 11th. In 1906 the winter outbreak ended on Feb. 28th, and the summer revival of the disease on April 15th. In 1905 occurred the exceptionally severe epidemic known as the "Beketaieff epidemic," in which some thousand persons lost their lives; it began on Oct. 13th and continued until February, 1906. Some minor outbreaks also seem to have occurred in the summer of 1905. In 1904, when plague was prevalent among the Kirghiz and Cossacks in the Uralsk province, it was imported thence to the Bukeëf Horde in December, but caused only a limited outbreak. (It is stated that 415 persons died from the disease in the Uralsk province.) In 1903 there was apparently no plague in the Horde, though it was epidemic elsewhere in the Astrakhan government. In 1902 there was only a summer outbreak, beginning on June 3rd. In 1901 there was no summer epidemic; the winter epidemic of 1900–01 began on Dec. 23rd and is known as the Tekebai-Tubek epidemic. No summer revival of plague occurred in the summers of 1899 or 1900; but in the winter of 1899–1900 there was an epidemic, which began on Nov. 15th. Beyond this date there are said to be no records of plague in the Bukeëf Horde. The article contains observations upon the epidemiological, clinical, and post-mortem characters of plague in these regions, and on the measures taken to suppress the outbreaks.

In another article published in the *Vratch*, No. 52, of Dec. 31st, 1911, M. Shurupof, a veterinary surgeon, records some observations upon the possibility of plague occurring in camels. Attention had already been called to this possibility, and some of the above plague outbreaks in man were said to have been accompanied by a disease in camels. In one of the cases at Saganai the attack was said to have followed the consumption by the patient of the flesh of a camel that had died from that disease, and it was added that Dr. Klodnitski, a bacteriologist, had found the plague bacillus in the camel's tissues. The importance of such an observation, if confirmed, is obvious, and the Government has sent a veterinary specialist to the steppes to make further investigations. (See the *Vratch*, No. 42, of Oct. 15th, p. 1630). M. Shurupof's experiments were carried out in the laboratory in Fort Alexander I. at Cronstadt, as far back as 1902, with the object of obtaining a protective serum from these animals. But although three animals were injected intravenously with relatively enormous quantities of plague cultures, none of them took the disease. It is concluded that these animals are entirely insusceptible to plague. A similar experiment, made on a single camel in the same laboratory in 1898, had led to the same negative result. The writer of the article thinks that the recent observations above referred to made in the Kirghiz steppes must be received with doubt, and that possibly the organism isolated from the dead camel by Dr. Klodnitski and others was the Bacillus bipolaris plurisepticus, and not the plague bacillus.

It should be noted that all dates mentioned in the above paragraphs are according to the Old Style.

Plague in Odessa.

Four cases of plague occurred in Odessa late in September and early in October last (Old Style). None have been reported since.

Plague in Smyrna.

On Sept. 17th a fatal case of plague was seen in Smyrna. The patient was a porter connected with the German post-office in that city. He had arrived from Koniah three weeks before. On Sept. 22nd a second case was seen, in another

employee of the same post-office. In neither case was the source of infection known.

Plague in Mersina.

A single case of plague occurred in Mersina on Nov. 5th. The patient was a *kavass*, aged 24; he died on the 8th. Here also the origin of the infection could not be traced.

Plague in Jeddah.

The annual revival of plague in Jeddah appears to have begun on Jan. 13th, when a single case was seen in a native servant. A second case followed on the 15th. No fresh case was seen until the 31st, when 3 deaths were reported, followed by a fresh case on Feb. 2nd. No case has been reported since. Yanbo and El Wej have both remained free from the disease.

Constantinople, Feb. 12th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Health of Birmingham.

THE health committee in reporting upon the health statistics for 1911 points out the difficulty of comparison owing to the extension of boundaries. The committee, therefore, deals with the figures relating to the city as constituted prior to Nov. 9th. The death-rate for the year was 16·8 per 1000. In the three previous years it was 14·8, 16·6, and 16·9. The higher figure last year was due to the excessive rate in the summer months. Although the summer was the hottest on record the diarrhœal mortality was lower than in some previous years. It was 1·37 per 1000, whereas in 1906 it was 1·64, and in 1904 1·83. The special efforts made in recent years to lessen the diarrhœal death-rate and infant mortality have evidently met with some success.

Birmingham and Consumption.

The mortality from tuberculosis shows a substantial decrease when compared with the mortality during the previous ten years, the number of deaths being 1490, as compared with the average for ten years of 1771. At Salterley Grange, where early cases only are treated, there was arrest of the disease in almost all the 116 patients discharged. Much good has also been done with the more advanced cases admitted at Yardley-road Sanatorium, where patients are taken for six weeks' educational treatment. Tuberculin is administered to these patients by the intensive method, and the treatment is continued afterwards in a special dispensary for as long as necessary. The sanatorium accommodates 60 patients, and it frequently happens that everyone is receiving tuberculin. About 300 inoculations a week are given in connexion with the sanatorium and dispensary, and the Birmingham system of giving a short period of sanatorium treatment, combined with tuberculin, merits attention from the authorities concerned with the administration of the money set apart for the treatment of consumption under the Insurance Act.

A New Obstetrical and Gynæcological Society.

For some months there has been an effort to form an Obstetrical and Gynæcological Society for the Midland and Western Counties. It has been strongly felt that a society should be formed on lines similar to those already existing in London, Glasgow, Edinburgh, and the North of England. A meeting was held on Feb. 19th which was largely attended not only by local specialists but by delegates from Bristol, Cardiff, Lincoln, and Woodhall Spa, and a society was formed with Professor Edward Malins as president.

The Children's Hospital.

The annual report shows that 15,612 patients were treated during 1911, as compared with 15,261 in 1910. The average cost per person maintained in the hospital was 4*s.* 2*d.* per week, as compared with 3*s.* 11*d.* in 1910. The year had been occupied with the development of the plans for the new hospital. The committee had at call for building and furnishing about £35,000, but it was anticipated that a further £15,000 would be required.

The University of Birmingham.

The annual report presented at the annual meeting of governors on Feb. 28th shows that 1017 students attended the University last session, of which number 633 were matriculated students. The number of matriculated medical students was 85, the largest number since 1904, when it reached 92. The total number of medical students matriculated and not matriculated was 200, of whom 45 were women. The chief item of medical interest in the report concerns the new regulations for clinical teaching. The council has been negotiating with the Board of Education with a view to obtaining grants for medical instruction. In order to take advantage of this new source of income it was necessary to constitute a University clinical board to take over the work previously carried on by the Birmingham Clinical Board and to appoint as members of the staff of the University the whole of the teachers engaged in clinical teaching. In addition the Board of Education required that to ensure permanence of clinical teaching the hospitals should undertake to continue to provide facilities, subject to six years' notice being given at any time they considered it desirable to discontinue the admission of University students to the wards of the hospitals. The committees of the General and Dental Hospitals have accordingly passed resolutions in this direction. In the case of the Queen's Hospital a special Act of Parliament imposes upon the hospital the duty of providing clinical instruction.

Association of Public Vaccinators of England and Wales.

The annual meeting of this association was held in the Midland Hotel on March 1st. Mr. A. H. Martin, of Evesham, was elected president, and Dr. Arthur Drury, of Halifax, gave an interesting address. In the evening the annual dinner was held and was largely attended, not only by the members but by several local members of the profession who had been invited as guests. There was an interesting toast list, "The Association" being proposed by the President and responded to by Dr. A. E. Cope, who eloquently pleaded for a greater recognition of Jenner's services as the founder of preventive medicine. Dr. Drury proposed "The Guests of the Association," and referred to the great loss the association had sustained by the death of Dr. F. T. Bond, of Gloucester. Professor Robert Saundby, the President of the British Medical Association, responded. He described his own attitude towards the Insurance Act, originally stated in his presidential address in July, and from which he had not wavered. He regretted that a majority of the Council had differed from him, and failed to realise the strong feeling shown by the mass of the medical profession in the country. Dr. G. A. Wilkes proposed "The Public Health and Poor-law," and Dr. J. Robertson, medical officer of health of Birmingham, responded. Interest was given to the meeting by the exhibition of two letters of Jenner and an original diploma of membership of the Jennerian Society, which were in the possession of Dr. Drury.

March 5th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Formal Opening of the New St. Paul's Eye Hospital.

ON Feb. 27th the new St. Paul's Eye Hospital was formally opened by the Earl of Derby in the presence of a large and influential gathering. Lord Derby, in declaring the hospital open, said there was a special feature of the hospital which he wished to commend—namely, the bringing of the mother and the newly born infant straight into the hospital, in order that the infant could be treated before the disease (ophthalmia neonatorum) had got a hold upon it. By that means they would be able to check the disease, which nine times out of ten, if not treated, would land the child not into a hospital of the kind, but into a blind asylum or some similar institution. Mr. Sydney Stephenson (London), in moving a vote of thanks to Lord Derby for presiding, made feeling reference to the late Mr. George Edward Walker, remarking that the opening of that hospital was the crowning point of a career devoted to humanity. Its founder was one who believed that the greatest care should be given to children, recognising, as he did, that the hope of the future was the child. In that hospital they had accomplished a scheme for the treatment of ophthalmia neonatorum. In this, as in other respects, Liverpool had led the way, and it had not only attracted interest in this country but on the Continent and

in America. They had a scheme there for the prevention of blindness which would surpass the wit of man to exceed. The truth was that a philanthropist's dream had been converted into a sound, salutary, and substantial success. Dr. Arthur N. Walker, in seconding, mentioned that his father had always cherished the ambition of having established in Liverpool a hospital such as they now possessed. One of the greatest benefits of that building was the accommodation provided for children. They could take in cases at the beginning and stop disease. It was a happy omen, he thought, for the hospital that in the past year they had treated more cases than ever before of ophthalmia in infants, and for the first time not one case in Liverpool had resulted in blindness. Lord Derby was presented with a gold key the head of which was formed after the shape of the Maltese cross, and which was supported on a prettily chased acanthus leaf cluster. In the centre panel were the arms of the Earl of Derby. Amongst the ladies present, probably the most interested spectator was Mrs. George E. Walker, the widow of the late founder of the hospital.

Sir Benjamin Johnson on the Medical Aspects of the Insurance Act.

At the annual meeting of the Everton Liberal Association, held last week at the club premises, an interesting speech was delivered by Sir Benjamin Johnson, the leader of the Liberal party in Liverpool. Referring to the Insurance Act, Sir Benjamin Johnson said that having once agreed to the doctrine of compulsory insurance—which all parties had done apparently without a qualm—it was childish to quibble as to the consequences. A great experimental measure such as the Insurance Act was bound to have defects and weaknesses which experience alone could remedy. Mr. Lloyd George had told them that the Act would be worked independently of the doctors. He, for one, felt that an Insurance Act unattended by medical benefits would be shorn of its real value as a great measure for the promotion of national health. He did not think that Mr. Lloyd George was altogether to blame for the trouble connected with the doctor's remuneration. Contract practice had been almost universal in the medical profession for generations, but there was no doubt that the bulk of the profession had been preparing, prior to the introduction of the Act, to put it on a better basis, and the advent of the Insurance Act had precipitated the revolt. It was of enormous importance in the fight against sickness and disease to have the willing and thorough coöperation of the doctors, and the 4*s.* 6*d.* capitation fee was, in his judgment, inadequate to secure that end. The Government had declared that they were willing, on proof being shown that the amount fixed by the Act was inadequate, to reconsider the terms; and he trusted that as a result of negotiations between the British Medical Association and the Insurance Commissioners a satisfactory compromise might be reached. Failing such a settlement he believed the Act would be a comparative failure, instead of a regenerative force making for the building up of a healthier and stronger nation.

Banquet to Sir William Lever.

Sir William Lever, the chairman of the Liverpool School of Tropical Medicine, and Lady Lever were entertained to dinner at the Adelphi Hotel on Feb. 29th by the staff of the school on their return from a visit to South Africa.

March 5th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh Hospital for Women and Children and the Hospice.

AT the annual meeting of the Edinburgh Hospital and Dispensary for Women and Children and the Hospice held in Edinburgh on Feb. 29th, Lady Kinross presiding, the report of the executive committee made especial reference to the opening of the new wing of the hospital by Her Majesty the Queen in July, 1911. The amalgamation of the two institutions was now completed, the Hospice being entirely reserved for maternity cases. Since the amalgamation there had, however, been a falling off in subscriptions for the two institutions, and in consequence one of the wards in the hospital, for patients paying at the rate of 5*s.* weekly, had had to be closed. In the report of the treasurer this falling off was stated in several cases to have been the result of the increased taxation in the country. The medical report referred to the necessity for a children's ward in the hospital as well as for the reopening of the second 5*s.* ward, and drew attention to the work done at the infant consultation and milk depôt in the High-street. Since the opening of the new wing at the hospital there had been a gratifying increase of work, especially on the surgical side. The adoption of the reports was moved by Mr. G. A. Berry, President of the Royal College of Surgeons of Edinburgh. A tribute was paid to the memory of the late Dr. Sophia Jex-Blake, founder of the hospital.

Presentation to Dr. John Fraser.

On Feb. 27th a gathering of ladies and gentlemen took place in the hall of the Royal College of Physicians of Edinburgh, when a presentation was made to Dr. John Fraser, who lately retired from the position of H.M. Commissioner in Lunacy for Scotland. The presentation took the form of a three-quarter length portrait of Dr. Fraser by Mr. Fiddes Watt, A.R.S.A. The chair was occupied by the Master of Polwarth, chairman of the Board of Lunacy, and among those present were Dr. Byrom Bramwell, President of the Royal College of Physicians; Sir Thomas and Lady Clouston; Mr. Addison-Smith; Dr. Urquhart; Dr. Campbell; Dr. Turnbull, Dr. John Macpherson, Dr. Hamilton Marr, and Mr. John Cowan, W.S., H.M. Commissioners for Scotland; Dr. Charles Macpherson, Deputy Commissioner; Dr. G. M. Robertson, superintendent, Royal Edinburgh Asylum; Mr. T. W. L. Spence; Dr. Carlyle Johnstone, Dr. James Ritchie, and Dr. Carmichael. The chairman spoke of his own good fortune in having had during the whole of his tenure of the chairmanship of the Board of Lunacy Dr. Fraser as his colleague. He referred to the advances that had taken place in lunacy work during that time, and gave an appreciative tribute to the kindly disposition of Dr. Fraser, which, he said, must have had a great influence on all concerned with the care of the insane in Scotland. Sir Thomas Clouston, in making the presentation, referred to Dr. Fraser's career as a student and later as a graduate, and spoke of the presentation which was being made by some 200 of Dr. Fraser's friends as representing friendship and comradeship in every part of the world. Dr. Fraser, in reply, expressed his pride and gratitude at the honour done him, and his deep regret that his connexion with lunacy administration, and with Scottish administration generally, had now drawn to a close.

March 5th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal National Hospital for Consumption.

THE report presented at the annual meeting of the Royal National Hospital for Consumption, which was held last week in the hall of the Royal College of Physicians, stated that 436 cases had been treated during the year. Of these, 339 were discharged and 90 remained in hospital on Dec. 31st last; seven patients died. The board reiterated its intention of keeping the benefits of the hospital as a curative institution for incipient and early cases of the disease. The hospital had received £3000 of Lord Iveagh's gift to the King, and the money would be used for the provision of recreation rooms. The chairman of the meeting, Major Wellesley, said that the board knew nothing of the reported suggestion to erect a hospital for advanced cases in the hospital grounds, which, he said, were quite unsuitable for such a purpose. During the year a system of graduated labour on the prescription of the medical officer had been introduced, with the purpose of preparing the patient on leaving the hospital to resume his ordinary work. Tuberculin was administered more extensively than formerly. A dental surgeon has been appointed to visit the hospital periodically. The medical report classified the results of treatment as follows: Very much improved, 4·3 per cent.; much improved, 23·1 per cent.; improved, 21·1 per cent.; stationary, 17·6 per cent.; worse, 9·4 per cent.; died, 1·6 per cent.; remaining in hospital, 20·6 per cent.

Dinner of the Dublin University Biological Association.

The annual dinner of the Dublin University Biological Association was held on March 2nd at the Gresham Hotel, Mr. Arthur Ball, the President, being in the chair. It was well attended by present and past members. Among the guests were Dr. Traill, Provost of Trinity College, Professor Culverwell, Professor T. H. Wilson, and Mr. W. Kennedy.

Convalescent Home, Stillorgan.

At the annual meeting of the Stillorgan Convalescent Home, held on March 4th, it was stated that the home last year received 1348 patients. An annexe containing 20 additional beds had been added. The home, which is situated a few miles out of Dublin, receives patients from the various Dublin hospitals.

The Belfast Maternity Hospital.

At the annual meeting on Feb. 27th it was reported that during the year 567 patients were treated and 382 children born. There were 8 maternal and 25 children's deaths. There were also 556 extern cases, with 1 death, so that in all 1123 patients (extern and intern) were treated, with 9 deaths, representing a death-rate of 0·8 per cent. There were also 360 extern gynæcological cases. The one unsatisfactory feature in the report was the slight falling-off in subscriptions which, though only £10, was the first decrease for many years.

Health of Belfast: High Death-rate.

In the report presented to the city corporation of Belfast on March 1st for the period between Jan. 14th and Feb. 17th the total death-rate was actually 30·8, being 12·9 higher than in the preceding month, and 14·1 higher than in 1911. This extraordinarily high mortality was due to deaths from chest affections, which gave a rate of 14·9, or about 9·4 in excess of the normal. Further, the zymotic death-rate, 2·5, was abnormally high, the excess being due to whooping-cough, the deaths from which were 70 as compared with 19 in the previous month, and 3 in the corresponding month of 1911. Pneumonia was responsible for 237 deaths, and chest affections for 226. The following table shows the mortality from pneumonia, diarrhœa, whooping-cough, and measles in Belfast during the past five years:—

Year.	Pneumonia.	Diarrhœa.	Whooping Cough.	Measles.
1907	696	212	64	201
1908	753	260	137	186
1909	705	244	213	10
1910	622	241	259	504
1911	468	290	67	2
	3244	1247	740	903

The National Insurance Act.

In various parts of Ireland considerable objection is being made to insurance lectures, in some places in consequence of objection to the Act, in others to the lecturers' previous political records. The Londonderry No. 1 rural council, on March 2nd, ordered simply to be marked as "read" a letter from the National Insurance Commissioners asking for the use of the council's offices for an explanation lecture.

Extraordinary Demand for Income-tax.

At a meeting of the Coleraine board of guardians on March 4th, a communication was received from the surveyor of taxes, Belfast, demanding from them income-tax on their balance in bank. The guardians desired their clerk to inform the surveyor that they declined to pay, inasmuch as they had no money except what was collected from the rates.

Rain-fall in February.

During the month of February rain fell on 18 days to the amount of 3·24 inches, which, added to the January fall, brings this year's total rain-fall up to 6·56 inches in the north of Ireland.

March 5th.

UNIVERSITY OF BRISTOL.—At a meeting of the Council held on March 1st Mr. Ernest W. Hey Groves, F.R.C.S., was appointed Lecturer in Surgery to dental students.—The thanks of the Council were given to the Bristol Royal Hospital for Sick Children and Women and the Victoria University of Manchester for gifts of valuable specimens to the pathological museum.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Reform of Medical Studies.

A TENDENCY towards reform in medical studies has prevailed for many months at the Faculty of Medicine of Paris, and, indeed, throughout France. It is directed towards both the medical curriculum and the different kinds of examination for appointments. The last part of this subject has not as yet been definitely settled, for the changes introduced in 1909 have satisfied no one, and the Minister of Public Instruction wishes to take advantage of the coming into force of the new decree concerning medical studies to effect a serious reform in the matter of appointments. To this end he has called on the Association of Members of the Teaching Bodies of the Faculties of Medicine to furnish a plan. Professors Roger, Pierre Delbet, and Weiss have been called on to report on the methods of appointment, while the legal status of the *agrégés* is being studied by Dr. Carnot and Dr. Jeanbrau, who advocate life appointments in preference to a nine years' term. The three professors have each been allotted for consideration one of the three sections—viz., medicine, surgery, and science properly so called—between which the examination for appointments is divided. Professor Roger, for medicine, advocates a common entrance examination lasting three-quarters of an hour, the submission of qualifications, and the examination in six special subjects—viz., medicine, dermatology, neurology, hygiene and legal medicine, pathological anatomy, and experimental and comparative pathology. The specialties in surgery will be gynæcology, surgery of infants, and genito-urinary diseases, but Professor Selbet thinks that these special subjects should be of a practical rather than a scientific nature. He also ascribes great importance to practical tests, which he would have strongly developed. Differing from his colleagues and even the general opinion, he would not hesitate also to exact from the candidates tests of memory. In his opinion a clinical teacher ought to be able to improvise a lesson on any subject that may present itself. Professor Weiss would divide the section of sciences into anatomy and histology, natural history, physiology, physics and chemistry, and pharmacology.

On the other hand, the Superior Commission met on Feb. 23rd, under the presidency of M. Liard, vice rector of the Academy of Paris, to examine the report of Professor Courmont, of Lyons, on the reform of medical examinations, and passed some important resolutions. It decided to include on the board of clinical examiners at the final examination physicians, surgeons, and accoucheurs of the hospitals agreed on by the Faculty as being in charge of the clinical course. The Commission voted, also, that after a certain number of failures at the same examination the student should be precluded from continuing his studies. M. Léon Labbé insisted on the importance of a knowledge of practical anatomy and surgery, now that, thanks to antiseptic and aseptic principles, all practitioners may be called on to perform certain operations. He also supported an amendment, according to which surgical anatomy should become a special subject of examination at the finals. The Superior Commission, after a lengthy discussion, decided on the introduction into one of the yearly examinations of an examination in stomatology. It also sanctioned the introduction of dentistry at the Faculty of Medicine.

National Conference of the "Gouttes de Lait."

The meeting of the medical founders and directors of the "Gouttes de Lait" will take place at Fécamp on May 26th, 27th, and 28th, on the initiative of Dr. Variot, Dr. Brunon, and Dr. Dufour, the organisers of the First International Congress of the Gouttes de Lait. At this conference, to which many promises of attendance have already been secured, the results so far obtained will be reported, and ways and means of rendering still more efficacious the struggle against excessive infant mortality among those brought up by hand will be sought. Infant feeding will be the main subject for consideration at this conference.

Appendicitis and Dysentery.

At the Société de Chirurgie recently M. Ombre made

a communication for M. Le Roy des Barres, on the Relations between Amœbic Dysentery and Appendicitis. The author thinks that when there is an amœbic infection of the appendix there is at the same time amœbic infection of the colon, but the infection of the appendix may be anterior, simultaneous, or posterior to that of the colon. Such cases of appendicitis, according to M. Le Roy des Barres, are purely amœbic, and he relies for proof on amœbic lesions of the appendix, but he by no means proves that secondary nfections play no part; indeed, in a large number of cases they do. The diagnosis between what appertains to the dysenteric typhlitis and what to the appendicitis is very difficult. In the case of light dysentery, with the appendicular signs but little marked, surgical intervention is contra-indicated, and medical treatment should be followed. On the other hand, whenever the crisis is severe or even clearly marked, operation should always be done. Under such circumstances appendicectomy is called for with the formation of a fistula of the cæcum in one or two operations.

The Treatment of Boils.

M. Gallois considers that furunculosis is a purely local disease resulting from repeated inoculations. The treatment, therefore, should be exclusively a matter of dressings. Discarding the use of water and of poultices, the author extols a method which consists of aborting the furuncles, if possible, by the local use of a drop of iodoacetone and applying locally a gauze compress well impregnated with glycerole of starch, to which boric acid or mercury oxycyanide has been added. Over this is put a layer of absorbent cotton without any impermeable covering, the whole being kept in place by a bandage. This dressing should be renewed every day or even twice daily. To cause desiccation it should be dusted with talc powder, to which a little paraffin has been added.

March 4th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The German Committee for the Forthcoming International Medical Congress.

A MEETING of representatives of medical societies, of official medical authorities, and of the medical press was held on Feb. 16th, in Langenbeck House, Berlin, for the purpose of electing a general committee for the International Medical Congress in London. Professor Waldeyer, who was in the chair, stated that 84 universities, medical post-graduate schools, medical societies, and journals were represented, and that many answers had been received from other medical bodies agreeing to send representatives to London. The committee was then elected, the officers being as follows:—President: Professor Waldeyer. Vice-Presidents: Professor Kirchner and Professor Kraus, of Berlin; Professor Döderlein, of Munich; and Professor Marchand, of Leipsic. General secretary: Professor Posner. Assistant secretary: Professor von Hansemann. Treasurer: Dr. Ernst Stangen. The committee will also include Professor Gudden of Munich, Professor Goldscheider and General-Surgeon Dr. Kern, of Berlin, Professor Schwalbe, editor of the *Deutsche Medizinische Wochenschrift*, and Professor Sonnenburg. The meeting agreed that the committee shall be a permanent one, and deal with the organisation of future international congresses in concert with the International Permanent Committee. Professor Sommer, of Giessen, moved that a whole day of the congress should be devoted to the discussion of the question of heredity in connexion with the several branches of medicine. The proposal was favourably received, and was referred to the Executive Committee for further consideration.

Operative Treatment of Tuberculosis of the Bladder.

At a recent meeting of the Medical Society Professor Casper read a paper on a method of relieving urinary troubles in tuberculosis of the bladder. He said that as the majority of cases of tuberculosis of the bladder were caused by tuberculosis of the kidneys; some of them might terminate in recovery after removal of the diseased kidney. In certain cases, however, where the kidney was either inoperable or where the tuberculosis of the bladder was in a too advanced state the tuberculous lesion of the bladder might continue or even increase. Cases attended with intolerable tenesmus and with contraction of the bladder to a capacity of only 20 or 30 cubic centimetres and in which all other therapeutical measures had proved useless were suitable for his operation. He had operated on two cases. One patient was a woman on whom nephrectomy had been performed seven years ago for tuberculosis, the result being that, notwithstanding a slight tuberculosis of the bladder, no pains had been felt for six years, but she subsequently suffered from severe pains and very frequent micturition. The urine was turbid and contained tubercle bacilli. The left kidney proved to be much enlarged and the capacity of the bladder was 30 grammes only. Cystotomy proved useless, the pains not being at all relieved by it. Professor Casper therefore performed nephrostomy by uniting the pelvis of the kidney to the skin, ureterostomy being impossible because of the abnormal situation of the hilus. The pains were relieved, but the secretion of urine through the fistula was very small, and eventually stopped altogether, notwithstanding the employment of irrigation through a drainage-tube. The vesical troubles disappeared, but the patient died on the seventh day after the operation. The second patient was a man 36 years of age on whom nephrectomy had been performed six years ago for tuberculosis of the left kidney. Previously to the operation severe pains had been felt in the bladder, but they were considerably relieved by the operation, so that the patient could work as a locksmith, but six years after the operation his state again became very bad, tenesmus and vesical pains ensuing which resisted all therapeutical measures. The urine was passed every half hour; it was purulent, but did not show tubercle bacilli. The capacity of the bladder had diminished to 80 grammes, and the patient had become greatly emaciated. Catheterism of the right ureter yielded clear urine with a small quantity of leucocytes. The sediment inoculated into animals rendered them tuberculous. Professor Casper performed ureterostomy, uniting the upper end of the divided portion to the skin and thus forming an artificial outlet in order to exclude the bladder. There was an abundant discharge of urine through a catheter kept permanently in the fistula, the result being that the pains completely disappeared the day after the operation. The state of the patient was very good; by irrigation through the catheter the urine soon became clear and had continued to be so. The patient wore a receptacle for holding the urine. His weight increased six kilogrammes. Professor Casper said that this result proved that severe vesical pains might be relieved by excluding the bladder. Ureterostomy was, in his opinion, preferable to nephrostomy, for the latter, although a simpler operation, had eventually an injurious effect on the function of a tuberculous kidney, as shown in the first case above mentioned. Ureterostomy was more difficult from a manipulative point of view, but it did not injure the kidney. It was advisable to implant the ureter into the skin either in the lumbar or the supra-inguinal region. During the first few days a catheter must be left permanently in the ureter. The operation was indicated not only when the remaining kidney was tuberculous but also when it proved healthy, because by cutting off the communication between the bladder and the kidney the danger of an infection from the bladder was diminished. Pyelitis, which might be a sequel to ureterostomy, was less dangerous than tuberculous infection. In the discussion Professor Israel recommended the making of a suprapubic fistula of the bladder instead of a ureteral fistula, because of the danger of pyelitis. Professor Landau said that the method of Professor Casper seemed to be preferable to establishing a fistula of the bladder because of the impossibility of applying an apparatus to receive the urine in fistula of the bladder. Professor Casper replied that, according to his experience, after the formation of a vesical fistula the pain was not only not relieved, but even became more intense.

The Action of Salvarsan in Anthrax.

Professor Bettmann and Dr. Laubenheimer, of Heidelberg, have contributed to the *Deutsche Medizinische Wochenschrift* an article on the Action of Salvarsan in Anthrax. Professor Bettmann stated that in two cases of anthrax attended in his clinic the symptoms disappeared rapidly after the injection of 0·3 gramme of salvarsan into a vein. Dr. Laubenheimer has accordingly made experiments on animals, especially on guinea-pigs and mice, which are very susceptible to the infection of anthrax, and in which the course of the disease

is not identical with that of human anthrax, for in the latter case spontaneous recovery may occur, but in the lower animals a highly virulent infection is always fatal. The result of the experiments was that animals treated by salvarsan not later than 20 minutes after inoculation with anthrax all survived, except one, which died 22 days after the inoculation. All the other animals either remained alive or died from some other cause than anthrax; a few of them died from poisoning by salvarsan. Sometimes the animals were saved by salvarsan when injected with it even six hours after the inoculation with anthrax, and the germs disappeared. When the salvarsan treatment was longer delayed a fatal issue could not be avoided, but the animals died later than those which had not received an injection of salvarsan. Salvarsan acted as a disinfectant by directly destroying the anthrax bacilli and their spores. Sometimes only the development of the germs was hindered, allowing them to increase and cause death after the salvarsan had been eliminated from the organism. In the test-tube salvarsan hindered the development of the germs to a remarkable degree. Animals which had been cured of anthrax by an injection of salvarsan were not rendered immune against a later infection. The experiments showed that salvarsan by destroying the anthrax bacilli might be a valuable remedy against the disease.

March 4th.

NOTES FROM SOUTH AFRICA.

(FROM OUR OWN CORRESPONDENT.)

Medical Legislation.

General Smuts is due to reintroduce the Public Health Bill. Whether it will appear in the form it did last year, when it was laughed out of the House, remains to be seen. As it appeared then its only object was to vest in the Minister of the Interior the powers, duties, and functions of the respective medical officers of health of the four Provinces. General Smuts has announced that he is not prepared to introduce a Bill to consolidate the law relating to the practice of medicine this session, or even to allow a licence granted by the Medical Council of one province to be operative in another. He has, however, at least been induced to promise that the draft Bill will be submitted to the medical profession before it is introduced into the House next year.

Treatment of Lunatics.

The Prisons Bill which was passed last year renders it illegal for any lunatic to be received into a prison hospital if there is any public asylum or hospital in the district. Now this provision is, of course, a most proper one and received the warm support of the medical profession, particularly as an assurance was given by the Government that immediate provision would be made for dealing with lunatics in these districts at the asylums or elsewhere. No such provision has, however, been made, and magistrates appear to be at their wits' ends to know what to do with cases of lunacy pending accommodation being found in the overcrowded asylums. It has become a practice to hire on behalf of the Government empty houses and to place patients therein, as often as not in the charge of policemen. These patients are consequently far worse off than they used to be, for now they are deprived of the conveniences to be had in the gaol hospitals. It is true that the stigma attached to incarceration in the gaol is removed, but as the bulk of the patients are natives the stigma is possibly more imaginary than real. At any rate, the present state of affairs is too horrible to be allowed to remain, and is a disgrace to the administration. Although full publicity has been given to the facts in the lay press it would seem that the increase in the asylum accommodation proposed during the current year will be insufficient to relieve the congestion to any great extent.

Closure of the Sydenham Asylum.

The Sydenham Leper Asylum, situated a few miles outside Bloemfontein, is shortly to be closed, and the inmates and a portion of the staff are to be transferred to the asylum at Pretoria. The unfortunate inmates, the majority of whom are natives, number about 160, and they are drawn almost exclusively from different parts of the Orange Free State. There is likely to be some trouble in carrying out the transfer, as it is almost certain that objections will be raised in Parliament. It will involve a good deal of hardship on the inmates, for hitherto it has been easily possible under the existing arrangements for friends and relatives occasionally to visit them, but in future this will be quite out of the question. Mr. W. C. C. Pakes, the former Government bacteriologist of the Transvaal under the Crown Colony Administration, and for some years past the superintendent of the Sydenham Asylum, is to be retrenched.

Rand Water Shortage.

For some weeks past the position in Johannesburg has been very grave owing to the shortage of water supplied by the Rand Water Board. The fact is that the requirements of the town and mines have increased out of all proportion to the increase in the supply furnished by the Board. On several occasions the municipal reservoirs have been nearly empty, and it would seem to be imperative that steps should be taken to procure water from other sources of supply.

Proposal to Establish a Municipal Dairy at Bloemfontein.

Amongst a number of important questions at present engaging the attention of the Bloemfontein town council is that of the establishment of a municipal dairy. Dr. D. M. Tomory, the municipal medical officer of health, has asked his council to vote £3000 for this purpose, with the object of showing what can be done with a pure milk-supply. The project is meeting with some opposition from dairymen, but it is likely to go through. It is to be hoped that it will, as many of the existing dairies are far from suitable, and the effect will be that these will have to be improved or they will be ousted by the municipal undertaking. This project, if carried out, will be the first of the kind undertaken by a municipality in South Africa. There has been some difficulty in selecting a suitable site, and in order that the milk may be conveniently brought to the cooling chambers of the municipal premises it has been suggested that the dairy should be erected on the commonage to the east of the town.

Plague at Durban.

Three cases of bubonic plague were discovered in Durban during the past month—all terminating fatally. Two of the cases appear to have been employed in the dock area, whilst the third worked in a store outside the town. This is the first outbreak that has occurred in South Africa since 1907. Two of the cases were both working in sheds in which rats had evidently been dying from plague for some months past, whilst the third was connected with an infected store in the town. At first hopes were officially expressed that the infection was confined to the dock area, but an examination of stores in the town quickly revealed the fact that rats were dying of plague in a number of widely separated areas at a considerable distance from the docks. Dr. F. A. Arnold, the acting medical officer of health for the Union, has been in Durban to consult with the Mayor and Dr. P. Murison, the municipal medical officer of health, and as a result of his visit an agreement has been drawn up defining the respective spheres of operations of the Government and municipality. A special plague committee has been appointed, consisting of an equal number of nominees of the Government and the Durban corporation, and this committee has been given full power to deal with all matters relating to the outbreak within the borough and harbour area. Special plague regulations have been promulgated. Fortunately Durban has a well-organised health department which is working under the direction of the plague committee, and energetic measures are being taken to deal with infected premises and to destroy rodents throughout the town. The plague committee has been issuing encouraging bulletins from day to day, but inasmuch as the outbreak has occurred at a time of the year most favourable to the spread of rat plague in this country it would seem hardly probable that the measures which have been instituted will do more than control the outbreak until, at any rate, it has run its course amongst rodents in the area, the same as it apparently has always done in the past whenever it has been permitted to get a hold on any centre in South Africa. The infection is believed to have been introduced from Mauritius, but the vessel which brought the infection is not known with any certainty. Two comments on the situation may fairly be made. Had the Natal health department not been prematurely broken up there appears to be some reason to think that under the *régime* inaugurated by Mr. Ernest Hill, the late health officer of Natal, a stricter

watch would have been kept at the port for disease amongst rats, and that the mortality might have been discovered in time to have confined the outbreak to the dock area; and, secondly, that the special plague committee would not have been necessary, for the organisation to have dealt with the outbreak would have existed in the province, and money would doubtless have been saved the taxpayer. Apart from the operations now being undertaken in Durban, a number of municipalities have awakened to a sense of their responsibilities, and are spending money on destroying rats and rectifying insanitary conditions. Thus, Johannesburg is spending £30,000 on putting the insanitary location hereafter mentioned into a better state.

Small-pox in Johannesburg.

An outbreak of small-pox has broken out in the location of Johannesburg just referred to, which is known as the Malay location. This has caused considerable anxiety to the community, and but for the prompt action of the municipal medical officer of health, Dr. C. Porter, it might easily have assumed serious proportions. The outbreak had been in progress some days before it was discovered, and consequently a considerable number of the inhabitants of the location were contacts, including a number of unvaccinated persons. At the time of writing it would seem to have been successfully confined to the location and to have been practically stamped out therein.

Anthrax on the East Rand.

An extensive outbreak of anthrax amongst cattle has been discovered on the East Rand, which has evidently been in progress for some time. This disease is always specially dangerous in South Africa, as most natives will feed readily on the half-cooked flesh of animals dead from disease. A large number of cattle are officially reported to have died from the disease already, and one adult native. It is probable, however, that there have been other deaths which have not been recorded. The Agricultural Department has taken up the matter and has imposed stringent quarantine over the area. It was, however, uncommonly slow in acting in the first instance.

Feb. 1st.

Obituary.

SIR FRANCIS RICHARD CRUISE, M.D. DUB., F.R.C.P. IREL., M.R.C.S. ENG., D.L.,

PHYSICIAN TO HIS MAJESTY THE KING IN IRELAND; CONSULTING PHYSICIAN TO THE MATER MISERICORDIÆ HOSPITAL; EX-PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF IRELAND; KNIGHT OF ST. GREGORY.

Sir Francis Cruise died at his residence, 93, Merrion-square, Dublin, on Feb. 26th, in his seventy-eighth year. His death removes one of the most prominent of Dublin physicians, and the Senior Fellow of the Royal College of Physicians, of which he was President from 1884 to 1886. He was born in Dublin on Dec. 3rd, 1834; his father, who was a solicitor in good practice, descended from an ancient Meath family, died when he was only a few weeks old. The son's education did not suffer, however, thanks to the fact that his mother was a wise and cultured woman, who strove successfully to lay the foundations of his character deep in religion and scholarship. He received his early education from the Jesuit Fathers in Belvedere College and Tullabeg, and entered Trinity College, Dublin, in 1852, graduating as B.A. in 1857 and as M.B. in 1858. In the School of Physic in Trinity College he came under the influence of such men as Banks, Apjohn, and Robert William Smith. At the House of Industry Hospitals, where he took his clinical work, he had as teachers Adams, Smith, Banks, Lyons, and Corrigan. He attended lectures also at the Carmichael School, where he did much scientific work in association with Robert McDonnell. His health gave way under the strain of excessive work, but was restored after a trip to America.

In 1861 the Mater Misericordiæ Hospital was opened, with Cruise as junior physician. The rest of his professional life was associated with this institution, in the development of which he took a very important part. At the jubilee celebrations of the hospital last September Cruise was naturally a prominent figure. His early years in medical practice in Dublin were lean enough, his earnings from private patients in his first three years being £7, £11, and £30. At this time he was much occupied with teaching; subsequently, however, he enjoyed for more than a generation one of the best practices in Dublin. Although at first interested in surgery, in his later years Cruise devoted himself entirely to medicine. In 1865 he introduced an "endoscope" for the internal examination of the body cavities, which proved particularly useful for the exploration of the bladder. Considering the only illuminants available at the time, it was a remarkably ingenious application of reflected light. In his own hands and in those of others who accustomed themselves to its use it was of considerable service. It is worth remembering that by the invention of this instrument, the precursor of the modern cystoscope, Cruise was a pioneer in bladder surgery. In the eighties his attention was attracted to hypnotism, and in 1890 he visited Nancy and Paris, observing the work of Liébault, Bernheim, Luys, Voisin, and others. He published his notes of this journey on his return to Dublin in the *Dublin Journal of Medical Science*, May, 1891. So recently as 1907 he wrote an introductory chapter to Dr. Lloyd Tuckey's book on "Treatment by Hypnotism and Suggestion." On other subjects of general medicine he was a prolific writer, and frequently contributed to the medical journals. In his work at the Mater Misericordiæ Hospital he was a careful clinician and a lucid and inspiring teacher. In professional life in Dublin he was held in the highest respect, and he interested himself in all public matters affecting the profession. He had, however, many activities outside his profession. As a citizen he was interested in many charities and philanthropic works. He was also a cultured musician.

In literary pursuits his interest extended widely outside of medicine. His boyhood's devotion to "The Imitation of Christ" matured in adult life, and he visited many foreign libraries and consulted innumerable manuscripts, with the purpose of establishing beyond doubt (which he eventually did) that Thomas à Kempis was veritably the author of this famous book. It is interesting to know that the citizens of Kempen, in Germany, have named one of its streets in his honour, in recognition of his vindication of their famous townsman. Cruise belonged to a type of physician more rare now than formerly. While thoroughly conversant with the best in medicine, he was also a cultured scholar in other fields. In character he was a man of deep religious convictions, of humble mind, and of great personal charm. He married in 1859 Miss Mary Power, and in 1909 they celebrated their golden wedding. By her death a year later an ideally happy union was severed. He leaves a large family, of whom one son is a medical man.

In 1896 Cruise received the honour of knighthood. Ten years later he declined a baronetcy. In 1901 King Edward appointed him his physician-in-ordinary in Ireland. In 1905 Pope Pius X. conferred on him a knighthood of St. Gregory.

RICHARD DILL, M.D. EDIN., L.R.C.S. EDIN.

BY the death of Dr. Richard Dill, which occurred at Birchwood, Burgess Hill, Sussex, on Feb. 24th, a link has been broken in the chain of Brighton's past history. Born in Ireland in 1822, he was the youngest son of the Rev. Richard Dill, of Newtown Limavady, by his marriage with Jane, daughter of Robert Gordon, Carnstrone House, Antrim, who, with her sister and co-heiress, were the sole remaining representatives of the Jacobite house of Gordon of Glenbucket.

Richard Dill took the L.R.C.S. diploma at Edinburgh in 1845, and proceeded to the M.D. degree in the same year. He was a favourite pupil of Sir James Young Simpson, the discoverer of chloroform as an anæsthetic, but declining the great physician's suggestion to start practice in Edinburgh under his auspices he went to China, where he spent several eventful years.

A cousin who held a Government appointment at Hong-Kong decided this visit to China, and Dill travelled in the interior and on the coast, and made a valuable collection of ferns, including some unknown varieties which he handed over to Sir Joseph Hooker at Kew on his return. He also accompanied for about 1000 miles Robert Fortune, the famous explorer and botanist, who was then introducing the tea plant from China into the North-West Provinces of India, and thus laying the foundation of the Indian tea industry.

In these travels Dr. Dill had many adventures, and seized every opportunity of practising his profession under the new and exhilarating conditions. On one occasion when he arrived at a village he found that his medical fame had preceded him, and that a number of people suffering in various ways were waiting for him. Among these was a woman with a central cataract in each eye, whose pupils he dilated with belladonna, so that she was able to see her son for the first time for years, a result which she and her friends proclaimed as a veritable miracle.

He came back to England in 1849 and settled at Brighton, joining his uncle, the late Mr. John Dill, in practice. Mr. John Dill was a very interesting person, who, after beginning life as an officer in the navy of the East India Company, had resigned his commission and studied medicine, re-joining the service as surgeon. Later he began to practise at Brighton in partnership with a Mr. Drummond in Regency-square. With this firm Richard Dill continued in partnership until death left him the only survivor, and for a long generation he enjoyed a very high professional position in Brighton. He did not retire until the end of the nineteenth century, having attained a high reputation as a physician, and having made many fast friends among the leaders of the profession, not only in the British Islands, but upon the continent. He owed his success in practice firstly to a sound judgment, a receptive brain (which up to the last kept him abreast of all the most recent developments of scientific research), and an unusual knowledge of therapeutics; but secondly to the intimate and individual sympathy with his patients as men and women which his temperament enabled him to offer. His personal ideals of the conduct of life were very high, and he carried them uniformly into the practice of his profession; and it is not too much to say that every patient of his was left with an enhanced estimate of our profession, as well as with confidence that his own needs were being anxiously met. He was a man of the deepest religious conviction, who was ready to credit others with the single-mindedness and generosity which marked his own actions. For upwards of 50 years he carried on in Brighton a very active professional life, being also keenly interested in all matters concerning the sanitary advancement of the town. He saw Brighton grow from its Georgian position to what it is to-day.

Retiring from practice some ten years ago, he took up his residence at Burgess Hill, and there celebrated his golden wedding. His wife, a daughter of Sir Charles Wale, K.C.B., survives him, as do two out of his four sons, the elder being Dr. J. F. Gordon Dill, the senior physician to the Royal Sussex County Hospital. Dr. Dill died peacefully in his sleep. His health had been failing for some time, but the actual cause of death was a sharp attack of influenza.

HENRY FITZGIBBON, M.D. DUB., F.R.C.S. IREL.,

CONSULTING SURGEON TO THE ROYAL CITY OF DUBLIN HOSPITAL AND TO MERCER'S HOSPITAL; EX-PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS IN IRELAND.

Mr. Henry Fitzgibbon, one of the best-known Dublin surgeons and a past President of the Royal College of Surgeons in Ireland, died at his residence, 24, Fitzwilliam-place, Dublin, on Feb. 23rd, in his seventy-first year. He was the younger son of the late Gerald Fitzgibbon, Q.C., a Master in Chancery, his elder brother being Lord Justice Fitzgibbon, one of the most distinguished jurists of our time. Mr. Fitzgibbon had been in failing health for some years past and had resigned most of his appointments within the last few months.

Henry Fitzgibbon received his medical education in Trinity College, Dublin, where he graduated as M.B. in 1866. He was for some time in the Poor-law Service, being dispensary doctor, first at Clondalkin, and afterwards at Howth, both in County Dublin. On his election as surgeon to the City of Dublin Hospital he took up surgical practice in that city, and soon came to occupy a high place in the profession. He was elected a Fellow of the Royal College of Surgeons in Ireland in 1881, and was its President in 1888–89. For many years he was chief medical officer to the General Post Office, Dublin, and was also surgeon to the Westmorland Lock Hospital. Perhaps because of his large practice he was not an extensive contributor of papers to the medical journals or societies. It is noteworthy, however, that so long ago as 1887 he wrote on the treatment of ununited fractures by metal screw-taps. Whatever he wrote was clear and cogent, and bore the impress of firm conviction. He was also a careful and successful teacher. He retired from active work at the City of Dublin Hospital some 15 years ago. Dr. Fitzgibbon was, like other members of his family, possessed of a striking individuality, which impressed itself on all who knew him. His independence of mind and courage in expressing his opinions commanded universal respect. By his more intimate friends he was regarded with a very deep affection. He leaves a large family, his eldest son being a member of the medical profession.

THE NATIONAL INSURANCE ACT.

THE BRITISH MEDICAL ASSOCIATION'S LETTER TO THE COMMISSIONERS.

THE newly appointed State Sickness Insurance Committee of the British Medical Association, in accordance with the instructions given by the Representative Body, drew up the following letter last week, and forwarded it to the secretary of the National Health Insurance Joint Committee:—

SIR,—I am instructed to inform you that at the Special Representative Meeting of the British Medical Association, held at the Guildhall, February 20-22, the following resolution was unanimously passed:—

"That this Representative Meeting direct the Council to inform, in plain and unmistakeable language, the Commissioners appointed under the Insurance Act, 1911, that unless the *minimum* demands of the Association be embodied in the regulations to be issued by the Commissioners, in such a manner as shall be effectual and permanent with a view to having the same embodied in an amending Act, it is the intention of the British Medical Association to call upon all its members and upon all other medical practitioners to decline to form panels or undertake any other medical duties which may be assigned to them under the Act, in conformity with the undertaking which has already been signed by over 26,000 medical practitioners."

I am to point out to you that the *minimum* demands of the Association mentioned in the above resolution comprise:—

1. An income limit of £2 a week for those entitled to medical benefit.
2. Free choice of doctor by patient subject to consent of doctor to act.
3. Medical and maternity benefits to be administered by Insurance Committees and not by Friendly Societies. In connexion with the question of the method of administration of medical benefit, the Representative Meeting resolved that all questions of professional discipline should be decided exclusively by a body or bodies of medical practitioners, and that the power of considering all complaints against medical practitioners should be vested in the local Medical Committee with a right of appeal to a Central Medical Board to be appointed for that purpose.
4. The method of remuneration of medical practitioners adopted by each Insurance Committee to be according to the preference of the majority of the medical profession of the district of that Committee.
5. Medical remuneration to be what the profession considers adequate, having due regard to the duties to be performed and other conditions of service.

After careful consideration the Representative Meeting resolved that the policy of the Association be to claim 8*s*. 6*d*. as a *minimum* capitation fee, not including extras and medicine, for members of approved societies, and to claim the recognition of payment per attendance, in which case the fees must be on such a basis as shall be deemed an equivalent by the State Sickness Insurance Committee with recognition of a £2 *maximum* income limit.

6. Adequate medical representation among the Insurance Commissioners, in the Central Advisory Committee, and in the Insurance Committees, and statutory recognition of a local Medical Committee representative of the profession in the district of each Insurance Committee.

On behalf of the British Medical Association I am instructed to lay these important points before you and to inform you that they constitute the irreducible *minimum* demanded by the Association.

Another subject which received the special attention of the Representative Meeting was the question of dispensing. The Association is of opinion that dispensing, as hitherto, should be done or arranged for by the medical practitioner for his own patients should he so desire, payment to be made according to the scale of prices fixed by the Insurance Committee in accordance with the terms of the Act.

I am, &c.

ALFRED COX, Acting Medical Secretary.

British Medical Association, February 29, 1912.

CITY OF LONDON AND EAST LONDON DISPENSARY.—The report and statement of accounts of this institution for the year 1911 has just been issued. The number of attendances again shows an increase over previous years, being 2950 in excess of those for the year 1910. The total was 114 212, of which number 6903 were free. The receipts from subscribing members were £2682 14*s*. 6*d*., being £28 in excess of those for the previous year. The donations and subscriptions amounted to £93 14*s* 6*d*. Subscriptions and donations may be sent to the bankers, Messrs. Barclay and Co., Limited, of 54, Lombard-street, E.C., to any member of the committee, or to the secretary at his offices, 58, Lombard-street, E.C.

Medical News.

Her Majesty the Queen will pay an informal visit of inspection to the Barnato Joel Charity and Cancer Research Institution on Wednesday, March 27th.

LISTER INSTITUTE OF PREVENTIVE MEDICINE.—In the lecture theatre of this institute Dr. William Nicoll will give a series of seven lectures on Helminthology on Tuesdays and Fridays at 5 P.M., commencing on March 19th.

THE Hunterian Society's silver medal awarded annually for the best original essay submitted by a general practitioner has been won by Dr. Arthur Goulston, of Heavitree, Exeter, for his essay on "The Use of Sugar in Heart Disorders."

POOR-LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.—At the last council meeting of this association, held at 34, Copthall-avenue, London, E.C., Dr. D. R. Balding presiding, the honorary secretary, Dr. Major Greenwood, reported that an answer had been received from the Local Government Board to the two questions submitted by the council respecting the statistics required in the early part of last November from Poor-law medical officers. The two questions were: 1. Did the Local Government Board consider that under Article 205 of the General Order of 1847, duties such as these were included? 2. In the event of boards of guardians being willing to pay an extra fee for the work would the upper Board sanction it? The answer to (1) was in the affirmative, and with regard to (2), the Board would be ready to sanction extra payment for the work if requested by boards of guardians. It was thought by the council that Poor-law medical officers would gain little benefit from this concession, as few boards of guardians could be got to make the request. The answer of the Chancellor of the Exchequer to their application for a clause in the National Insurance Act to protect Poor-law medical officers of more than 20 years' service from loss that might accrue to them through that measure in respect to their superannuation was considered. The Chancellor suggested that the better course was to communicate in the first instance with the Local Government Board. It was generally considered that this suggestion, as it necessitated an amendment of the Superannuation Act, was an evasion. The honorary secretary submitted the details of a serious breach of the Poor-law Orders which the Winchester guardians had been guilty of, and which had been condoned by the Local Government Board. These guardians had advertised for a medical officer for the Micheldever district, stating that he would only be appointed for three years. Dr. P. E. Todd had been elected on the terms of this advertisement, but he was unaware that it was contrary to the Medical Appointments Order of May, 1857. Article 2 of that Order laid down that where a medical officer resided in his district he should be entitled to be appointed permanently. As Dr. Todd resided in his district he was entitled to a permanent appointment. The Winchester guardians were carrying on a crusade against all permanent appointments, wishing to have their officers entirely in their own hands, and although the Local Government Board had at first refused its sanction to the appointment of Dr. Todd for only three years, it has been induced to withdraw its objection. In reply to a letter the Local Government Board stated that in view of the reasons brought forward by the guardians it had agreed not to offer objection to the appointment. Dr. Major Greenwood, in criticising the reply, said that in a newspaper report of the meeting of the guardians nearly every speaker definitely stated that the reason was that the Board objected to *permanent appointments*. The fact of the advertisement made the matter worse; for it flagrantly contravened the Medical Appointments Order. The council thought that this was a case of considerable gravity. It threatened that security of tenure so long enjoyed by Poor-law medical officers. Again, was the consent of the Local Government Board accidental, or did it indicate a change of policy with regard to permanent appointments? The honorary secretary was instructed to write again to the Local Government Board, asking if the action of the Winchester guardians in this matter was going to be approved generally. It was also resolved to approach the National Poor-law Officers' Association on the subject, and to request the British Medical Association to take action in the matter. A letter was read from a district medical officer of the Gainsborough Union, relating how he had been deprived of his office in order to add his district on to another neighbouring district to induce a medical practitioner to take the two. The Local Government Board had been appealed to, but, after expostulating, had consented to the guardians' action.

MIDLAND AND WESTERN COUNTIES OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting was held on Feb. 20th at the Grand Hotel, Birmingham, to found the Midland and Western Counties Obstetrical and Gynæcological Society. The chair was occupied by Mr. Christopher Martin. Mr. H. Beckwith Whitehouse read the notice convening the meeting, and Dr. E. Malins then proposed the motion that an Obstetrical and Gynæcological Society, including the Midland, Eastern, and Western Counties of Great Britain, be now formed. Dr. Malins said that a feeling had long existed that the provinces were not adequately represented in these important matters. In the large area over which it was proposed to form a new society there were large towns and a wide district where much activity was displayed in the pursuit of obstetrical and gynæcological knowledge. There were here comprised teaching centres and a number of hospitals where much valuable work was done, and a large amount of treatment carried on without due recognition or opportunity of record. It had been found that much time had been taken up with often inconvenience in journeying to and from London, and outside that great centre there was a mass of material which could not be utilised to the extent deserving of its interest and value. The provinces were overshadowed by the metropolitan societies, in which progress and interchange of opinions were naturally gathered and centralised; hence those outside had not the same proportionate advantages. This want would be supplied by the new society in which it was confidently expected there would be a willing response to the facilities afforded by the mutual coöperation of its members. The motion was seconded by Dr. John T. Hewetson and carried unanimously. Mr. J. Furneaux Jordan proposed that the society be called the "Midland and Western Counties Obstetrical and Gynæcological Society." He thought that the addition of the word "Eastern" would unnecessarily lengthen an already long title, but he hoped the society would not exclude the admission of members practising in the eastern counties. Dr. Beatrice Webb seconded the motion, which was carried unanimously. Mr. E. Tenison Collins (Cardiff), in proposing that the object of the society should be the promotion of the science and art of obstetrics and gynæcology, said that he welcomed the formation of the society, emanating as it did from Birmingham, the original home of English gynæcology. Mr. Furneaux Jordan seconded the motion. Mr. Martin then proposed that the government of the society should be vested in the office bearers, who should be elected from among the members, and should consist of a president, three vice-presidents, a treasurer, general secretary, local secretaries, and a council of not less than six. It was further proposed that the officers and council should be elected annually by ballot. Mr. Beckwith Whitehouse seconded the motion. The election of officers and council for 1912–13 then took place, when the following were unanimously elected:—President: Dr. Malins (Birmingham). Vice-Presidents: Mr. Martin (Birmingham), Dr. Walter C. Swayne (Bristol), and Mr. H. T. Hicks (Derby). Honorary treasurer: Dr. C. E. Purslow (Birmingham). Honorary general secretary: Mr. Beckwith Whitehouse (Birmingham). Honorary local secretaries: Mr. D. C. Rayner (Bristol) and Dr. T. C. Clare (Leicester). Other members of council: Dr. F. L. Harman Brown (Coventry), Mr. Tenison Collins (Cardiff), Dr. Wheelton Hind (Stoke-on-Trent), Dr. William Smith (Nottingham), Dr. Thomas Wilson (Birmingham), and Dr. C. J. Williams (Woodhall Spa). The President then took the chair and proposed that the society should be itinerant, and that arrangements for the meetings should be placed in the hands of the council. This was seconded and carried unanimously. It was further resolved that the

proceedings at each meeting should consist in the exhibition of living cases, specimens, and instruments, and the reading and discussion of "short communications" and papers. The secretary was asked to approach the editorial committee of the *Journal of Obstetrics and Gynæcology of the British Empire* with a view to the publication of the proceedings and papers read before the society. A pathological subcommittee was also formed, to which specimens of unusual interest or complexity may be submitted for report. The following were unanimously elected to serve on this committee for the year 1912–13: Professor R. F. C. Leith, Dr. John T. Hewetson, and Dr. L. G. J. Mackey. The committee has power to coöpt other members. Mr. Martin then moved that the council be empowered to draw up a set of rules and be instructed to submit the same to the next general meeting of the society. The motion was seconded by Dr. Wilson and carried unanimously.

TENURE OF OFFICE OF SANITARY OFFICIALS.—At the last meeting of the executive committee of the Mansion House Council on Health and Housing a report on the tenure of office of sanitary officials in and around London was received, and after consideration the following resolutions were passed:—

This Council are of opinion that it would be in the interests of the public and lead to the better administration of the laws relating to sanitation if the medical officers of health in Greater London who devote the whole of their time to public work, and all sanitary inspectors and inspectors of nuisances in London and Greater London respectively, were, after any necessary period of probation, appointed to their offices without limit of time, and if they were not liable to be removed from their office except by the Local Government Board or by their respective councils with the consent of the Local Government Board.

That this resolution be communicated to the Local Government Board, with the request that they will give the matter their consideration and take such steps as may seem to them suitable to give effect to this recommendation.

THE After-Care Association for Poor Persons Discharged Recovered from Asylums for the Insane held its annual meeting on Feb. 28th, at Queen's Gate Hall, South Kensington, when Lord Claud Hamilton presided. The report and balance-sheet for the year 1911 showed a very satisfactory increase, not only in contributions received, but also in cases successfully helped, these having far exceeded the number dealt with in any previous year. An urgent appeal was made for increased funds to carry on and extend the work of this, the only association of its kind in the United Kingdom.

CHELSEA CLINICAL SOCIETY.—The annual dinner of this society will take place at the Richelieu Hotel, Oxford-street, on Wednesday, March 20th, at 7.45 for 8 o'clock punctually. Professor Einthoven will be present by request. Tickets, price 7*s.* 6*d.*, may be obtained from the senior secretary, Dr. J. F. Halls Dally, 16, Lower Seymour-street, Portman-square, London, W.

GALTON EUGENICS LABORATORY (UNIVERSITY OF LONDON).—A lecture on Tuberculosis: Heredity and Environment, will be delivered by Professor Karl Pearson, F.R.S., in the Galton Eugenics Laboratory, University College, London, on Tuesday, March 12th, at 8.30 P.M.

SAMARITAN FREE HOSPITAL FOR WOMEN.—The annual general meeting of governors of this charity will be held in the board room of the hospital on Tuesday next, March 12th, at 5 P.M.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

National Insurance Lecturers.

IN the House of Commons on Thursday, Feb. 29th, certain aspects of the action of the Insurance Commissioners in appointing lecturers to explain the working of the National Insurance Act were criticised. Mr. H. LAWSON raised one point in the course of the debate which has interest to the medical profession. How, he asked, were those lecturers to deal with the medical benefit. They could not, he pointed out, explain what was contemplated, because the Insurance Commissioners had not come to terms with the medical profession. In his opinion it was doubtful whether they could come to terms. It was a very serious thing that the lecturers should be asked to deal with the claims of the medical men without knowing in what way the question would be met. Mr. MASTERMAN, who replied on behalf of the Government, did not deal at length with the point Mr. LAWSON raised. He merely referred the House to an answer which he gave to Sir PHILIP MAGNUS on Feb. 26th. That answer stated that the lecturers had been given careful instructions to explain the Act as it stood on the statute book, and the alternative attitudes which the Insurance Commissioners were empowered to adopt towards medical benefit.

Asylum Officers' Superannuation Bill.

Sir CHARLES NICHOLSON has introduced a Bill in the House of Commons "to amend the Asylum Officers' Superannuation Act, 1909." It was read a first time. This Bill is "backed" by Colonel LOCKWOOD, Mr. CROOKS, Mr. MILLAR, Mr. HARRIS, and Mr. NANNETTI.

Royal Commission on Sewage Disposal.

A sum of £3807 is proposed in the estimates for 1912-13 for the expenses of the Royal Commission on Sewage Disposal. Seven reports have been made by this commission since it was appointed in 1898. Its members are now investigating the question of the disposal of trade effluents (other than distillery effluents) when not mixed with sewage. Their observations on the effects of discharging effluents of known composition into streams are now nearly complete, and they are considering the data thus obtained in connexion with the question of standards and tests.

Miners' Phthisis.

It is stated in the estimates for temporary Commissions for the year 1912-13 that the special research which will be necessary in connexion with the important branch of the inquiry of the Royal Commission on Mines, dealing with miners' phthisis, may be prolonged. It has therefore been thought desirable to estimate for the whole year.

Royal Commission on University Education in London.

According to a statement made in the estimates for 1912-13 by the secretary of the Royal Commission on University Education in London the Commission has still a considerable amount of evidence to hear upon several different parts of its inquiry. It is not at present possible to say anything definite with regard to its probable duration.

The Health of the Army.

Colonel SEELY, the Under-Secretary of State for War, in his general statement of army policy to the House of Commons on Monday, March 4th, made an encouraging statement on the improved health of the British soldier. "The sobriety of the army," he said, "has increased out of all knowledge. In 1889, 688 men were admitted to hospital suffering from alcoholism. In 1903 the number had sunk to 169. In 1910, the last year for which we have figures, the number was 37. That is a drop from 688 to 37. The admissions to hospital for certain preventable diseases, which have done so much harm to the army in many ways, have been reduced, I am glad to tell the House, in quite an extraordinary degree. During the last seven years they have been reduced by more than half, and the deaths have been reduced to a quarter of what they were seven years ago."

HOUSE OF COMMONS.

WEDNESDAY, FEB. 28TH.

Voluntary Insurers and Medical Benefit.

Sir PHILIP MAGNUS asked the Secretary to the Treasury whether, having regard to the fact that under the National Insurance Act as it stood any person who, having been compulsorily insured for a period of five years, might become and remain a voluntary insurer entitled to medical benefit at such annual rate as might be arranged, be his income what it might, it was proposed, by regulation of the Commissioners or otherwise, to fix any limit of income beyond which such insured person should cease to be entitled to medical benefit at the common rate.—Mr. MASTERMAN replied: I beg to refer the honourable Member to Section 15, Subsection 3, of the Act. An income-limit which may be fixed under that subsection would, of course, apply to the particular class of voluntary contributors to whom he refers.

Vaccination Officers and Exemption Certificates.

Mr. TOUCHE asked the President of the Local Government Board whether he could give any indication, by way of percentage or otherwise, of the approximate reduction in each year since Jan. 1st, 1908, in the remuneration of vaccination officers arising from exemption certificates; and whether he proposed to take any steps to deal broadly and comprehensively with the cases of officers who had suffered serious pecuniary loss, and place their future remuneration on a satisfactory basis.—Mr. BURNS answered: Owing to the variety in the fees paid to vaccination officers in different districts I am not able to indicate the percentage reduction of the remuneration of these officers since 1907, but the number of vaccinations in England and Wales has declined from 695,147 in 1907 to 531,567 in 1910. I am endeavouring to deal with the cases of officers who have suffered serious primary loss.

Vaccination Exemptions.

Mr. STEWART asked the President of the Local Government Board whether he could state the number of exemptions granted against vaccination in 1908, 1909, 1910, and 1911, respectively; and the number of unvaccinated persons in the United Kingdom, as far as could be estimated, at the present moment.—Mr. BURNS answered: The number of exemptions received by vaccination officers in England and Wales was as follows: 1908, 162,799; 1909, 190,689; 1910, 239,947; 1911 (first half), 119,335. There are no data upon which an estimate of the number of unvaccinated persons in the country can be made.

THURSDAY, FEB. 29TH.

Medical Department of Ceylon.

Mr. MACCALLUM SCOTT asked the Secretary of State for the Colonies whether there were any, and, if so, what, appointments in the

Medical Department of the Government of Ceylon which were reserved for Europeans only.—Mr. L. HARCOURT replied: I am not aware that any posts are exclusively reserved for Europeans, though it is considered desirable to have a certain comparatively small number of European officers in the Medical Department.

Mr. MACCALLUM SCOTT: May I take it, then, that there are no individual posts which are exclusively reserved for Europeans?—Mr. HARCOURT: That is my impression.

A Case of Anthrax.

Mr. JOWETT asked the Secretary of State for the Home Department whether he was aware that another death had occurred from anthrax, contracted at the firm of Messrs. Campbell and Harrison, woolcombers, of Shipley, a branch of Woolcombers, Limited, and, if so, what he intended to do in the matter, having regard to the frequent loss of life from this cause at the firm in question.—Mr. MCKENNA replied: I have received full reports of this case. The man was employed in card grinding—a process which is not dealt with in the regulations, and which until recently has not been regarded as presenting specific danger of anthrax. It is evident, however, from the circumstances of this case that measures will be necessary for protecting the workers against any dangerous dust which may be given off during the process, and I am advised that the use of appliances similar to those being now generally installed in the carding-rooms of Lancashire cotton mills should form an effective safeguard. Instructions will be given to the inspector to take up the matter at once with the firm in question.

Mr. C. BATHURST: In view of the steady increase in this fatal disease amongst birds and farm animals and human beings, will the right honourable gentleman direct an inquiry to see what is the best and most effective disinfectant against its spread?—Mr. MCKENNA: I am not sure whether that question ought not really to be addressed to my right honourable friend the President of the Board of Agriculture.

Vaccination Topics.

Mr. LANSBURY asked the President of the Local Government Board whether the action of the Metropolitan Asylums Board, in declining to receive boys recommended by the Southwark board of guardians on board the training ship *Exmouth* unless they had been vaccinated, had his sanction, seeing that this ignored conscientious objection, as recognised by law, and reinstated compulsion; and, if not, whether he would take steps to restore freedom of conscience to persons under the control of the Metropolitan Asylums Board.—Mr. BURNS wrote in reply: I am advised that the Metropolitan Asylums Board have a discretion whether they will admit an unvaccinated boy to the ship.

Mr. COTTON asked the right honourable gentleman whether the lymph used in cases of vaccination in Ireland was taken from calves which had not been slaughtered, while in England the same Board insisted upon lymph being taken from calves which were afterwards slaughtered and a post mortem made with a view to seeing whether such calf or calves were affected with tuberculosis or otherwise.—Mr. BURNS (in a written answer) replied: The Local Government Board in Ireland, on the recommendation of their bacteriologist, have sanctioned the adoption of a system under which all calves used for lymph production at the National Vaccine Institute, Dublin, shall be subjected to the tuberculin test instead of being slaughtered as formerly, and a post-mortem examination held. It is considered that the new system would be less costly and more efficient, and that the tubercular foci that might escape detection at autopsy would be at once revealed on application of the tuberculin test. The Board have arranged that the bacteriologist shall personally supervise the processes and methods of tuberculin testing, and see that they are carefully carried out in the case of every calf the lymph of which is to be used for vaccination purposes. The facts as regards England are correctly stated.

MONDAY, MARCH 4TH.

Anthrax.

Captain MURRAY asked the President of the Board of Agriculture whether, in view of the uncertainty that prevailed on the subject of anthrax, he would consider the advisability of appointing a committee to inquire into anthrax and its causes.—Mr. RUNCIMAN answered: I do not think that the occasion has arisen for the appointment of a Departmental Committee. Careful and continuous investigations are being carried on by the veterinary staff of the Board, and I think that for the present we may be content to await the issue of their investigations and the results of the operation of the anthrax order of 1910, which has been in force for little more than 12 months.

Mr. CHARLES BATHURST asked the right honourable gentleman whether, in view of the recent serious outbreak of anthrax among both human beings and farm animals in this country, and of the opinion generally held by the veterinary profession that the disease was mainly traceable to imported hides and fleeces, he would take steps to secure the thorough disinfection by means of formalin, mercuric chloride, or other searching disinfectant, of such goods either prior to their embarkation abroad or to their debarkation at a British port.—Mr. RUNCIMAN answered: I anticipate that the report of the Departmental Committee on foot and mouth disease will be of considerable assistance to the Board in determining whether the disinfection of imported hides and fleeces is necessary and practicable, and I think it desirable, therefore, to await the issue of that report before taking any action in the matter.

Industrial Poisoning.

Mr. RAMSAY MACDONALD asked the Secretary of State for the Home Department whether he could give the number of cases of industrial poisoning reported in the period 1910 to 1912.—Mr. MCKENNA answered: The cases of industrial poisoning by lead, mercury, arsenic, and anthrax in factories and workshops notified under Section 73 of the Factory Act numbered in 1910, 573, of which 48 were fatal; in 1911, 755, of which 44 were fatal; in January of this year 42, of which 7 were fatal. There have been no cases of phosphorus poisoning since 1909. Cases of industrial poisoning from other causes and in other industries are not required o be notified to the Home Office.

The Inquiry into Patent Medicines.

Mr. LYNCH asked the Secretary of State for the Home Department whether he had decided on the constitution of the Joint Committee to be appointed to inquire into the traffic in patent medicines and allied matters; and whether, in view of the difficulty of disassociating the question of the sale of such drugs from that of the illicit practice of medicine, he would consent to enlarge the scope of inquiry so as to include these matters in the terms of reference.—Mr. MCKENNA said in reply: The answer to the first part of the question is in the negative. As regards the second part, I would refer the honourable member to the answer given to a similar inquiry on Dec. 13th last.

TUESDAY, MARCH 5TH.

Illness at Osborne College.

Mr. HUNT asked the First Lord of the Admiralty whether there were at present at Osborne College two cases of typhoid fever, two of bronchitis, one of pneumonia, and one of diphtheria; whether there were in the College altogether 70 people on the sick-list; and, if so, what steps were being taken to prevent the various diseases from spreading.—Mr. CHURCHILL replied: There were 32 cases of boys under medical treatment at Osborne College on March 3rd, 1912. Of these, one was a case of enteric fever, now convalescing; three cases of pneumonia; one of chicken pox. The remaining 27 are minor diseases and injuries. There were no cases of diphtheria or bronchitis.

WEDNESDAY, MARCH 6TH.

Housing of London University.

Sir PHILIP MAGNUS asked the Prime Minister whether the Government had made itself responsible for the housing of the University of London throughout its history; whether he was aware that in the Treasury Minute, dated Feb. 16th, 1899, the liability to provide a dignified and suitable home for the University, and also to make such provision as might thereafter be needed for the full extension and development of the University under the statutes and regulations made by the Commissioners appointed by the Act of 1898 was acknowledged; and what steps His Majesty's Government proposed to take in the matter, in view of the present unsatisfactory accommodation for the University as disclosed in the Report of the Royal Commission on University Education in London, issued on Dec. 15th, 1911.—Mr. ASQUITH said, in reply: The Government have as a matter of fact provided accommodation for the London University throughout its history. The Treasury Minute cited by the honourable Member was written before the removal of the old University to South Kensington and refers to the possibility of an arrangement which was actually carried out between the authorities of the Imperial Institute and the Treasury. It must not be construed as admitting liability on the part of His Majesty's Government to provide for all possible requirements of the University in the future. The recent report of the Royal Commission points out that the University must depend to a large extent upon private endowments for its full development. The Government do not think that it would be opportune to take any step in connexion with the present accommodation for the University before the Final Report of the Royal Commission has been issued.

BOOKS, ETC., RECEIVED.

BERGMANN, J. F., Wiesbaden.

Zur J.-K.-Behandlung. Eine kritische Uebersicht der vorliegenden J.-K.-Literatur nebst vergleichend tabellarischer Zusammenstellung der therapeutischen J.-K., Tuberkulin-Heilstätten und klimatischer Heilstätten-Erfolge. Von Sophie Fuchs-Wolfring, Paris, frühere Mitarbeiterin von Dr. Carl Spengler in Davos. Price M.2.40.

BRAUMÜLLER, WILHELM, Wien und Leipzig.

Aerztliche Standespflichten und Standesfragen. Eine historische Studie. Von Dr. I. Fischer, Direktor des Frauenkrankeninstitutes Charité, Wien. Price K.4.80, or M.4.

Vorlesungen über klinische Hæmatologie. Von Dr. Wilhelm Türk, Privatdozent für innere Medizin an der Universität, k.k. Primararzt und Vorstand der II. medizinischen Abteilung am Kaiser-Franz-Josef-Spitale in Wien. Zweite Teil, erste Hälfte. Price K.14.40, or M.12.

ENKE, FERDINAND, Stuttgart.

Statische Gelenkerkrankungen. Von Dr. Georg Preiser, Hamburg. Price M.10.

"JUGEND," VERLAG DER, Lessingstrasse, 1, München.

Der elektrochemische Betrieb der Organismen, die Salzlösung als Elektrogenet und der elektrolytische Kreislauf mit dem Gehirn als Zentrale. Eine Programmschrift für Naturforscher und Aerzte. Von Dr. Georg Hirth. Vierte vermehrte und verbesserte Auflage. Mit einem Anhang: Die Dynamik des organischen Betriebes. Von Med.-Rat. Dr. Franz C. R. Eschle. Price not stated.

KLINKHARDT, DR. WERNER, VERLAG VON, Leipzig.

Die rationelle Ernährungsweise. Praktische Winke über das Essen und den Nutzen oder Schaden der verschiedenden Nahrungsmittel. Von Dr. med. A. Lorand, Karlsbad. Price, paper, M.4; bound, M.5.

Leitfäden der praktischen Medizin. Herausgegeben von Professor Dr. Ph. Bockenheimer, Berlin. Band I. Zahnärztliche Chirurgie. Von Prof. Dr. med. Fritz Williger, Direktor der chirurgischen Abteilung des Königlichen zahnärztlichen Universitäts-Instituts zu Berlin. Zweite vermehrte und verbesserte Auflage. Price, paper, M.4.50; bound, M.5.20.

LEHMANN (J. F.), München.

Grundzüge der Hygiene, unter Berücksichtigung der Gesetzgebung des Deutschen Reichs und Österreichs. Von Dr. W. Prausnitz, O.Ö. Professor der Hygiene, Vorstand des Hygienischen Instituts der Universität und der Staatl. Untersuchungsanstalt für Lebensmittel in Graz. Für Studierende an Universitäten und technischen Hochschulen, Aerzte, Architekten, Ingenieure und Verwaltungsbeamte. Neunte erweiterte und vermehrte Auflage. Bearbeitet von Prof. P. Th. Müller und Prof. W. Prausnitz. Price, paper, M.9; bound, M.10.

MALOINE, A., Paris.

Contributions à l'Étude du Traitement des Tuberculoses Externes par les Injections Modificatrices. Les Injections d'Huile Gomenolée. Par le Dr. Jacques Tribes, Ancien Externe des Hôpitaux de Paris, Interne de l'Asile National des Convalescents des Hôpitaux de Paris à St. Maurice. Price Fr.2.

MARHOLD, CARL, Halle a.S.

Sammlung zwangloser Abhandlungen aus dem Gebiete der Verdauungs- und Stoffwechsel Krankheiten. Herausgegeben von

Professor Dr. A. Albu in Berlin. II. Band, Heft 7. Die Gicht und ihre Therapie mit besonderer Berücksichtigung der Diätetik. von Prof. Dr. A. Schittenhelm, Erlangen und Privatdozent Dr. J. Schmid, Breslau. Zweite, erweiterte Auflage. Abonnementspreis für 1 Band (8 Hefte), M.8. Einzelpreis dieses Heftes beträgt, M.1.60.

Sammlung zwangloser Abhandlungen aus dem Gebiete der Dermatologie, der Syphilidologie und der Krankheiten des Urogenital-apparates. Herausgegeben von Professor Dr. J. Jadassohn in Bern. I. Band, Heft. 1. Ueber moderne Syphilistherapie mit besonderer Berücksichtigung des Salvarsans. Von Geh. Med.-Rat Prof. A. Neisser, Dir. der Dermatolog. Univ.-Klinik und Poliklinik in Breslau. Abonnementspreis für 1 Band (8 Hefte), M.8; Einzelpreis dieses Heftes beträgt, M.1 50.

POINAT, A., 121, Boulevard Saint-Michel, Paris.

Le Livre du Médecin. Maladies du Cœur. Par J. Castaigne, Professeur agrégé, Médecin des Hôpitaux, et Ch. Remein, Chef de Clinique Adjoint à la Faculté de Médecine. Price Fr.5 net.

Le Livre du Médecin. Maladies des Reins. Par J. Castaigne, Professeur agrégé à la Faculté de Médecine de Paris, Médecin des Hôpitaux. Price Fr.5 net.

Le Livre du Médecin. La Tuberculose. Par J. Castaigne, Professeur agrégé, Médecin des Hôpitaux, et F.-X. Goursud, Ancien Chef de Laboratoire à la Faculté de Médecine. Price Fr.5 net.

Le Livre du Médecin. Le Diabète, la Goutte, l'Obésité. Par les Docteurs J. Castaigne, Professeur agrégé, Médecin des Hôpitaux, et F. Rathery, Professeur agrégé, Médecin des Hôpitaux. Price Fr.5 net.

STEINKOPFF, THEODOR, VERLAG VON, Dresden.

Preis-Schrift des Cartwright-Preises 1911 des College of Physicians and Surgeons der Columbia University, New York. Die Nephritis. Eine experimentelle und kritische Studie ihrer Natur und Ursachen sowie der Prinzipien ihrer Behandlung. Von Dr. Martin H. Fischer, Eichberg-Professor für Physiologie an der Universität Cincinnati, Ohio, U.S.A. Mit Autorisation des Verfassers in deutscher Sprache herausgegeben. Von Hans Handovsky Wien und Wolfg. Ostwald, Privatdozent an der Universität Leipzig. Price, paper, M.5; bound, M.6.

Die Kolloide in Biologie und Medizin. Von Prof. Dr. H. Bechhold, Mitglied des Königl. Instituts für Experimentelle Therapie zu Frankfurt a.M. Price, paper, M.14; bound, M.15.50.

TÖPELMANN, ALFRED (Vormals J. RICKER), Giessen.

Zur historischen Biologie der Krankheitserreger. Materialien, Studien und Abhandlungen. Gemeinsam mit V. Fossel, Graz; T. v. Györy, Budapest; W. His, Berlin. Herausgegeben von Karl Sudhoff, Leipzig, und Georg Sticker, Bonn. Heft 4: Georg Sticker. Zur historischen Biologie des Erregers der pandemischen Influenza. Price M.1. Heft 5: Karl Sudhoff. Mal Franzoso in Italien in der ersten Hälfte des 15. Jahrhunderts. Ein Blatt aus der Geschichte der Syphilis. Price, M.2.50.

URBAN UND SCHWARZENBERG, Berlin und Wien.

Diagnose und Therapie der Magen- und Darmkrankheiten. Anhang; Die chemische und mikroscopische Untersuchung des Mageninhaltes und der Faeces. Von Priv.-Doz. Dr. Walter Zweig, Abteilungs-vorstand am Kaiser-Franz-Josef Ambulatorium in Wien. Zweite, vermehrte Auflage. Price, paper, M.14; bound, M.16.

Fortschritte der Naturwissenschaftlichen Forschung. Herausgegeben von Prof. Dr. Emil Abderhalden, Halle a.S. Vierter Band. Price, paper, M.15; bound, M. 17.

VOSS, LEOPOLD, Leipzig und Hamburg.

Leitfaden der Krüppelfürsorge. Im Auftrage der Deutschen Vereinigung für Krüppelfürsorge gemeinverständlich dargestellt von Dr. Konrad Biesalski, Direktor und leitender Arzt der Berlin-Brandenburgischen Krüppelheil- und Erziehungsanstalt. Schriftführer der Vereinigung. Price M.1.

Dermatologische Studien. Band 22. Die Bedeutung des Sauerstoffs in der Färberei. Von P. G. Unna und L. Golodetz. Price M.4.

Ueber Säureretention als Krankheitsursache. Zugleich ein Beitrag zum Chemismus des Schlafes. Von Dr. Ludwig Hirschstein, Arzt für Stoffwechselerkrankungen in Hamburg. Price M.3.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

CATER, J., M.D. Brux., L.S.A., has been appointed Assistant Medical Officer of Health for Coventry.

COOK, Miss G. H., has been appointed Assistant Medical Officer at Headquarters of the General Post Office.

FERRAN, F. P., M.B., B.S. Belf., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Foxford District of the county of Mayo.

GREAVES, H. G., M.B., B.C. Cantab., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Oxted District of the county of Surrey.

GRIFFIN, W. R., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Tavistock District of the county of Devon.

KENDALL, FRANK EDWARD, M.B., Ch.B. Lond., has been appointed Junior Assistant Medical Officer at the Oxford County Asylum.

KING, BARTY, M.D. Edin., M.R.C.P. Edin., has been appointed Honorary Physician for Diseases of the Chest to St. Pancras Dispensary.

LAKIN, C. ERNEST, M.D. Lond., M.R.C.P. Lond., F.R.C.S. Eng., has been appointed Assistant Physician to the Middlesex Hospital.

LITTLEWOOD, MARTIN W., M.R.C.S., L.R.C.P. Lond., B.S. Lond., has been appointed House Surgeon at the Hampstead General Hospital.

OGILVY, DAVID, M.D., B.Ch., B.A.O Dub., has been appointed Medical Superintendent of the Long Grove Asylum.

ROBINSON, A. L., M.B., B.S. Lond., has been appointed House Physician at University College Hospital.

SIBLEY, W. KNOWSLEY, M.D. Cantab., M.R.C.P. Lond., has been appointed Physician to St. John's Hospital for Diseases of the Skin.

SPROULL, J., M.B., M.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Luddenden District of the county of Yorks, West Riding.

STAUNTON, M. D., L.A.H. Dub., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Swineford District of the county of Mayo.

TANNER, HAROLD H., M.B., B.S. Lond., has been appointed House Physician at the Hampstead General Hospital.

WALTON, ALBERT J., M.S. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Evelina Hospital for Children, Southwark.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BARNSLEY, BECKETT HOSPITAL.—Second House Surgeon, unmarried. Salary £100 per annum and all found.

BEDFORD COUNTY HOSPITAL.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and laundry.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Second and Third House Surgeons. Salaries £80 and £75 per annum respectively, with board, rooms, and laundry.

BRADFORD CITY BABIES' WELCOMES.—Medical Officer (female). Salary £250 per annum.

BRADFORD ROYAL INFIRMARY.—Two House Surgeons, unmarried. Salary £100 per annum, with board, residence, and washing.

BRENTFORD UNION INFIRMARY.—First Assistant Medical Superintendent, unmarried. Salary £185 per annum, with apartments, rations, washing, &c.

BRIGHTON AND HOVE HOSPITAL FOR WOMEN.—House Surgeon, unmarried, for six months. Salary £80 per annum, with apartments, board, light, attendance, &c.

BRISTOL CITY AND COUNTY.—Female Medical Inspector of Midwives and Health Visitors. Salary £100 per annum,

BRISTOL EYE HOSPITAL.—House Surgeon. Salary £80 per annum, with board and residence.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Junior Resident Officer. Salary £90 per annum, with rooms and attendance.

BURY ST. EDMUNDS, WEST SUFFOLK GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and laundry.

CAMBRIDGE, ADDENBROOKE'S HOSPITAL.—House Physician. Salary £80 per annum, with board, residence, and laundry.

CANCER HOSPITAL (FREE), Fulham-road, S.W.—Assistant Pathologist. Salary £350 per annum. Also House Surgeon for six months. Salary £70 per annum.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £150 per annum, with apartments.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant for three months.

CHELTENHAM GENERAL HOSPITAL.—House Physician, unmarried. Salary £80 per annum, with board, lodging, and washing.

CLIFTON, YORK, NORTH RIDING LUNATIC ASYLUM.—Assistant Medical Officer. Salary £150 per annum, with board, apartments, washing, and attendance.

DORCHESTER COUNTY ASYLUM.—Second Assistant Medical Officer. Salary £200 per annum, with board, &c.

DORCHESTER, DORSET COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, &c.

DUDLEY, GUEST HOSPITAL.—Senior Resident Medical Officer. Salary £100 per annum, with board, residence, attendance, and washing.

DUNBARTON, COUNTY OF.—Medical Officer. Salary £450 per annum.

DUNDEE ROYAL INFIRMARY.—Medical Assistants.

EDMONTON UNION INFIRMARY, Bridport-road, Upper Edmonton.—Second Assistant Medical Officer, unmarried. Salary £120 per annum, with residential allowances.

FRIMLEY, BROMPTON HOSPITAL SANATORIUM.—Medical Superintendent. Salary £500 per annum, with board and residence.

GLOUCESTER, GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Senior House Surgeon. Salary £100 per annum, with board, residence, and washing.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway, London, N.—House Surgeon and House Physician for six months. Salary at rate of £40 per annum in each case, with board, lodging, and laundry.

HEMEL HEMPSTEAD, WEST HERTS HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with rooms, board, and washing.

HEREFORDSHIRE GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £120 per annum, with board, apartments, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—Assistant Physician.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—House Surgeon, unmarried, for six months. Salary £30, with board, residence, &c. Also Assistant Casualty Medical Officer, unmarried, for six months. Salary £30, with board and residence, &c.

JERSEY POOR-HOUSE AND INFIRMARY (HÔPITAL-GÉNÉRAL).—Medical Officer. Salary £250 per annum.

KENSINGTON DISPENSARY AND CHILDREN'S HOSPITAL.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, apartments, and laundry.

KENSINGTON AND FULHAM GENERAL HOSPITAL, Earl's Court, S.W.—Assistant Physician.

KING'S COLLEGE HOSPITAL, London.—Clinical Assistant.

LARBERT, STIRLING DISTRICT ASYLUM.—Second Assistant Medical Officer. Salary £140 per annum, with board, lodging, and laundry.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary £100 per annum, with board and lodging.

LIVERPOOL DISPENSARIES.—Assistant Surgeon, unmarried. Salary £100 per annum, with board and apartments.

LIVERPOOL HOSPITAL FOR CANCER AND SKIN DISEASES, Myrtle-street.—Honorary Surgeon.
LIVERPOOL ROYAL INFIRMARY.—Dental Surgeon.
MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board and residence.
METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Physician.
MILLER GENERAL HOSPITAL FOR SOUTH-EAST LONDON, Greenwich-road, S.E.—Senior and Junior House Surgeon for six months. Salaries at rate of £100 and £85 per annum respectively, with board, attendance, and laundry.
NAVAL FORCES IN THE UNITED KINGDOM.—Dental Surgeon. Salary £1 per day.
NEW HOSPITAL FOR WOMEN.—Female Senior Assistant. Also Clinical Assistant.
OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—Casualty Officer, unmarried, for six months. Salary at rate of £80 per annum, with board, &c.
OXFORD UNITED DISTRICTS.—Medical Officer of Health. Salary £400 per annum.
QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Surgeon-in-Charge of Ear, Nose, and Throat Department.
ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and washing.
ROYAL EAR HOSPITAL, Soho.—House Surgeon, non-resident. Salary £40 per annum. Also Honorary Assistant Anæsthetist.
ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Senior Resident Medical Officer. Salary £100 per annum, with board, residence, and washing.
ROYAL HALIFAX INFIRMARY.—Senior House Surgeon, unmarried. Salary £120 per annum, with residence, board, and washing. Also Third House Surgeon, unmarried. Salary £80 per annum, with residence, board, and washing.
ROYAL NAVAL MEDICAL SERVICE.—Fifteen Appointments.
ST. THOMAS'S HOSPITAL MEDICAL SCHOOL.—Demonstrator of Physiology.
SALFORD ROYAL HOSPITAL.—House Surgeon. Salary at rate of £75 per annum. Also Junior House Surgeon and Casualty House Surgeon. Salaries at rate of £65 per annum. All for six months, with board and residence.
SHEFFIELD UNION HOSPITAL, Firvale.—Senior Resident Assistant Medical Officer, unmarried. Salary £130 per annum, with apartments, rations, &c.
SHEFFIELD UNIVERSITY.—Demonstrator in Experimental Physiology. Salary £200 per annum.
SHREWSBURY, SALOP INFIRMARY (COUNTY HOSPITAL).—House Physician. Salary at rate of £70 per annum, with board and apartments.
SOUTHAMPTON WORKHOUSE INFIRMARY, Shirley Warren.—Resident Assistant Medical Officer. Salary £130 per annum, with apartments, rations, washing, and attendance.
STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—House Physician. Salary £82 per annum, with board, residence, and laundry.
SUNDERLAND ROYAL INFIRMARY.—Junior House Surgeon for six months. Salary £80 per annum, with board, residence, and laundry.
UNIVERSITY COLLEGE HOSPITAL, Gower-street, W.C.—Assistant Surgeon.
VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—Radiographer. Salary £75 per annum.
WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, &c., 73, Welbeck-street, W.—Resident House Physician for six months. Salary at rate of £50 per annum. Also Clinical Assistants.
WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Resident Medical Officer. Salary at rate of £100 per annum, with board, rooms, and laundry. Also Resident Surgical Officer. Salary £125 per annum, with board, apartments, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Blisworth, in the county of Northampton; at Gatehouse, in the county of Kirkcudbright; at Medbourne, in the county of Leicester; at Rye, in the county of Sussex; and at Salisbury, in the county of Wilts.

Births, Marriages, and Deaths.

BIRTHS.

DEWEY.—On March 1st, the wife of E. W. Dewey, M.R.C.S., L.R.C.P., of Kingswear, London-road, Portsmouth, of a son.
HUGHES.—On March 3rd, at St. Thomas-street, S.E., the wife of E. C. Hughes, F.R.C.S. Eng., of a son (still-born).
LLOYD-WILLIAMS.—On Feb. 24th, at Sandon, the wife of R. V. Lloyd-Williams, M.B., of a son.
OWEN.—On Feb. 27th, at Grove Lodge, Kingston-on-Thames, the wife of John Griffith Owen, M.R.C.S., of a son.
YULE.—On March 2nd, at St. Albans-villas, Highgate-road, N.W., Marie, the wife of Bransby Yule, M.R.C.S., L.R.C.P., of a daughter.

DEATHS.

DODD.—On March 1st, at Walthamstow, Henry Noel Nelthorpe, L.R.C.P. & S. Edin., only son of Henry Alnutt Dodd, aged 43 years. R.I.P.
ELLIOT.—On March 2nd, at Belvedere-road, Upper Norwood, George Stanley Elliot, M.R.C.P., F.R.C.S. Edin., aged 68 years.
MCNALTY.—On March 1st, at Lansdowne-road, Blackheath, George William McNalty, C.B., M.D., F.R.C.S. Irel., Lieutenant-Colonel late Army Medical Staff, in the 75th year of his age.
SIMPSON.—On Feb. 28th, at Cumberland-terrace, Regent's Park, Frank Simpson, Surgeon-Major, retired, R.A.M.C.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE GALTON LECTURES.

QUITE recently the Eugenics Education Society has endeavoured to awaken public interest in this country in eugenics as a school subject. That it can be made interesting, as well as instructive, is shown by the two lectures with which Professor Karl Pearson opened the course of Galton lectures at University College recently, while if we eliminate the allusions to specific individuals the main contention of the lecturer could be understood by many children. His purpose was to show that Galton owed his mental characteristics more to ancestry than to environment, thus using the founder of the science of eugenics as an example of its teachings. Beginning with a brief reference to the writings of Galton, in which, while fully appreciating the modifications due to environment, he holds that mental and physical characteristics are alike inherited, and that "when nature and nurture compete for supremacy on equal terms, the former proves the stronger," Professor Pearson showed on the screen many portraits of the Galton, Darwin, and other families from which Sir Francis Galton was descended. Professor Pearson then dealt with the genealogical charts with which his audience had been supplied, the drawing up of which must have entailed much labour. The lecturer referred to the difficulty of obtaining trustworthy information in the tracing back of a pedigree through the squirearchy to the yeoman class, which can always be followed until about A.D. 1600 by the church registers and until A.D. 1500 through wills; beyond that time the difficulties are very great. The charts referred to were three in number. They showed: (1) the direct ancestors of Sir Francis Galton as far as yet traced; (2) a pedigree showing the connexion of the Barclays (Lucy Barclay was the paternal grandmother of Sir Francis Galton) with noteworthy ancestors, including the Frankish kings, the Carlovingians, French kings, and the royal houses of our own country; and (3) the immediate ancestry and collaterals. Emphasising the point that nurture had not very much to do with Galton's development, Professor Pearson alluded to the fact that school life was uncongenial to both Galton and Darwin. The lecturer then commented on the various forebears of Galton—the Saviles, the Sedleys, the Colliers and Colyears, the Barclays and Darwins—and showed how one marriage brought in one dominant factor and another marriage another. Professor Pearson closed his first lecture with an interesting comparison between Darwin and Galton based on the love of travel in the Barclay strain. Darwin accepted a position in the *Beagle* not from an inherent love of travel, but because he wished to add to the stock of scientific knowledge; while Galton, in his works, rushed from point to point, showing here a new field for biologists, here a field for the psychologist, and so on, thus showing the *Wanderlust* even in his writings.

COW-DUNG AS A PREVENTIVE OF PLAGUE.

WE have received a long letter from a Sub-Assistant Surgeon at Baroda on the subject of the washing of the floors of Hindu huts with cow-dung, a proceeding advocated by Dr. C. N. Saldanha for the prevention of plague, and to which reference was made in our columns on Sept. 30th and Oct. 21st last year. In this letter, after discussing certain objections and particularly that arising from the possibility of tubercle bacilli being present in the cow-dung, our correspondent describes the two usual methods in practice of applying the dung to the floors in India, viz., (1) in the form of a thick paste, and (2) by means of a watery solution. In either case it is mixed with some other substance, usually the yellow or black earth (pili or kali mati), and the mucilaginous character of the cow-dung referred to by Dr. Saldanha is chiefly due to this admixture. The first of these methods is carried out at long intervals, extending usually over some months or even years. The thick paste after drying cracks in many places, and these fissures harbour fleas, and possibly other organisms. The second process, that is the washing of the floor with the watery solution of dung, is carried out daily, the woman of the house commonly retaining for use the same filthy rag and earthenware pot for long periods. Our correspondent sees no benefit whatever in either of these methods as regards the prevention of plague, but apprehends, on the other hand, grave danger to the inmates of the house from the tubercle bacilli that may be present in the cow-dung. He does not see much prospect of disinfection of floors in India by pesterine, carbolic acid, or other cheap antiseptic coming into general use. While admitting that, except on the score of expense, cement floors would be the best he recommends a mixture of tar and concrete as being satisfactory for the purpose; but he asks if the readers of THE LANCET can suggest a cheaper substitute, as also a cheap and effective floor-washing disinfectant, so that all grades of the population of India may be able to use it freely.

THE WOMEN'S IMPERIAL HEALTH ASSOCIATION.

WE have received the belated first annual report (1910) of this association, the aim of which is to instruct the women of the Empire in the elementary principles of hygiene, and to disseminate knowledge regarding the care and nurture of children. These ends they propose to accomplish by the organisation of instructive and educational meetings throughout London and the provinces, and the establishment of local branches throughout the Empire; by conducting health caravan tours through the villages and towns of England; the distribution of leaflets; watching legislation on various questions concerning women and children, and similar methods. Over 100,000 children, it is said, die yearly in England and Wales through parental ignorance and neglect. The ignorance of mothers as to their own health and the proper feeding of children is appalling, and many serious disorders are largely due to preventable ignorance. The report recounts the history of the association, which was founded in 1898 as the National Women's Health Association, and has already done good work in the institution of courses of lectures in and around London. Two caravan tours have also been made and have aroused considerable interest among those for whose benefit they were planned. Kinematograph displays illustrative of health matters have also been given in various London parks. Another useful work was the agitation for adequate lavatory accommodation for women. The success of the association is shown by the fact that it has been able to place no less than £1000 towards a reserve fund. The list of officials includes many well-known medical men, Lord Ilkeston, Sir T. Lauder Brunton, Sir Anderson Critchett, Lieutenant-Colonel Sir Joseph Fayrer, R.A.M.C., Sir William Bennett, Dr. Mitchell Bruce, Mr. McAdam Eccles, Dr. Clement Godson, Dr. T. N. Kelynack, Mrs. Scharlieb, M.D., and Dr. G. E. Shuttleworth being vice-presidents, while Mr. E. M. Corner is honorary treasurer. The president is Muriel Viscountess Helmsley, and the secretary Miss R. V. Gill. The offices are at 3, Princes-street, Hanover-square, W.

THE DESTRUCTION OF THE BED-BUG.

IN an annotation in THE LANCET of Feb. 24th, 1912, p. 520, reference was made to the association of the bed-bug with the propagation of kala-azar in India and to the practical application of this fact to preventive measures. Messrs. Edward Cook and Co., Limited, of Bow, London, E., point out, in reference to the methods of extermination of this loathsome insect, that their disinfectant "Cofectant" has been used with great success, quoting an instance of some old houses, the woodwork, lath, and plaster of which were infested with bugs. The Cofectant was applied in the form of spray at a dilution of 1 part in 80 parts of water (1 tablespoonful to 1 quart).

NITROUS OXIDE AND OXYGEN ANÆSTHESIA.

H. P. F.—We believe Dr. Crile's contributions on nitrous oxide and oxygen anæsthesia in major surgery have not been collected into a single volume. The most important papers have been noticed in the Annus Medicus of THE LANCET during the last five or six years under the heading "Anæsthetics." The following papers may be referred to as among the most important: "Note on Nitrous Oxide and Oxygen Anæsthesia in comparison with Ether Anæsthesia" (*Cleveland Medical Journal*, 1909, vol. viii., p. 352), and *Surgery, Gynæcology, and Obstetrics*, August, 1911—London publishers, Baillière, Tindall, and Cox. The transactions of various American societies contain papers or remarks by Dr. Crile upon this subject. These appear in abstract in the *Boston Medical and Surgical Journal*, the *Medical Record*, or the *Journal of the American Medical Association*. Files of these during the last few years should be consulted.

M.R.C.S.—Professor Dieulafoy, of Paris, died on August 16th, 1911.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for March, April, and May:—

March 7th–11th (Berlin).—Thirty-third Balneological Congress.
March 23rd–April 4th (London, Royal Agricultural Hall).—International Smoke Abatement Exhibition.
April 1st and 2nd (Milan).—Italian National Convention upon the Sexual Question.
" (London).—First Congress of Pure Food and Health Society of Great Britain.
" 1st–7th (Tunis).—Twenty-second Congress of French-speaking Alienists and Neurologists.
April 8th–13th (Rome).—Seventh International Congress of Dermatology and Syphilology.
" 8th–15th (Johannesburg).—Thirteenth South African Medical Congress.
" 9th–11th (Paris).—Congress of Physiotherapy for French-speaking Physicians.
" 9th (Berlin).—Eleventh Congress of the German Society for Orthopædic Surgery.
" 9th–13th (Giessen).—Congress on Study of Families, Inheritance, and Race Hygiene.
" 10th–13th (Berlin).—Forty-first Congress of the German Surgical Society.
" 14th (Berlin).—Eighth Congress of the German Röntgen Society.
" 14th–20th (Rome).—Seventh International Congress on Tuberculosis.
" 15th–18th (Wiesbaden).—Twenty-ninth German Congress for Internal Medicine.
" 21st–24th (Munich).—Twenty-sixth Meeting of the Anatomical Society.
" (London, Olympia).—Ideal Homes Exhibition.
Spring (London).—Second Optical Convention.
May 7th–17th (Washington).—Ninth International Red Cross Conference.
" 23rd–25th (Hanover).—Nineteenth Meeting of the Union of German Laryngologists.
" 25th–27th (Paris).—International Musical Festival.
Whitsuntide (Portrush).—British Esperanto Congress
May 27th–June 1st (London).—Eighteenth International Congress of Americanists.
" 29th–31st (Berlin).—Fifteenth Session of the German Society for Gynæcology.
" (London).—International Horticultural Exhibition.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W (temporary address during building of new house).

TUESDAY.

SURGICAL SECTION (Hon. Secretaries—L. A. Dunn, James Berry): at 5.30 P.M.

Papers:

Mr. John Murray: Case of Pancreatic Calculus-stone Removed by Operation.

Mr. G. H. Makins, C.B., Mr. Cuthbert Wallace, and Mr. Percy Sargent: Multiple Growths of the Great Gut.

Mr. W. G. Spencer: Hydrocephalus Internus-rupture into the Subdural Space: Intracranial Tension and its Temporary Relief.

Mr. G. H. Makins, C.B.: Multiple Fibromata of the Tunica Vaginalis.

FRIDAY.

OTOLOGICAL SECTION (Hon. Secretaries—Sydney Scott, A. Logan Turner), at 11, Chandos-street, W.: at 5 P.M.

Discussion

On the Value and Significance of Hearing Tests (to be introduced by Dr. Thomas Barr (Glasgow) and Mr. Sydney Scott (London)).

ELECTRO-THERAPEUTICAL SECTION (Hon. Secretaries—G. Harrison Orton, Cecil R. C. Lyster): at 8.30 P.M.

Paper:

Dr. Bordier (of Lyons): The Radio-therapeutic Treatment of Uterine Fibroma.

(Members of the OBSTETRICAL AND GYNÆCOLOGICAL SECTION are specially invited to attend.)

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8.30 P.M., Mr. T. Walker: The Value of the X Rays in the Diagnosis of Hydronephrosis.—Dr. W. I. Bruce: The X Ray Examination of the Urinary Tract.

CHELSEA CLINICAL SOCIETY, Medical School, St. George's Hospital, S.W.

TUESDAY.—8.30 P.M., Annual Clinical Debate. Paper:—Prof. Sir Clifford Allbutt: The Physician and the Pathologist on Heart Failure. A Discussion will follow in which Sir Lauder Brunton, Dr. S. West, Dr. H. Mackenzie, Dr. C. C. Gibbes, Dr. F. P. Calger and others will take part.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, Lecture Theatre of the Society, 17, Bloomsbury-square, W.C.

TUESDAY.—8 P.M., Mr. R. R. Bennett and Mr. F. W. Gamble: Osmotic Pressure and its Physiological Bearing.—Mr. W. R. Pratt: Analysis of Ferri Citras cum Quinina et Strychnina (communication from the Society's Chemical Research Laboratory).

HUNTERIAN SOCIETY, London Institution, Finsbury-circus, E.C.

WEDNESDAY.—9 P.M., Mr. F. S. Kidd: A Fresh Aid to Prostatectomy.—Prof. W. G. Ball: Non-operative Treatment of Irreducible Hernia.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY.—Dr. E. K. Martin: The Effects of the Ultra Violet Rays upon the Eye (communicated by Sir J. R. Bradford, K.C.M.G.).—Dr. W. S. Lazarus-Barlow: On the Presence of Radium in Some Carcinomatous Tumours (communicated by Sir J. R. Bradford, K.C.M.G.).—Dr. C. Russ: An Improved Method for Opsonic Index Examinations Involving the Separation of Red and White Human Blood Corpuscles (communicated by Dr. A. D. Waller).—Prof. W. M. Thornton: The Electrical Conductivity of Bacteria and the Rate of Inhibition of Bacteria by Electric Currents (communicated by Prof. C. S. Sherrington).—Mr. E. C. Hort and Dr. W. J. Penfold: A Critical Study of Experimental Fever (communicated by Dr. C. J. Martin).—Mr. S. G. Shattock and Mr. L. S. Dudgeon: Certain Results of Drying Non-sporing Bacteria in a Charcoal Liquid Air Vacuum (communicated by Sir J. Dewar).

UNITED SERVICES MEDICAL SOCIETY, Royal Army Medical College, Grosvenor-road, S.W.

WEDNESDAY.—5 P.M., Fleet-Surgeon A. Gaskell: Dust Traps nd their Dangers on Board Ships.

OPHTHALMOLOGICAL SOCIETY, 11, Chandos-street, Cavendish-square, W.

THURSDAY.—8 P.M., Cases and Card Specimens. 8.30 P.M., Papers:—Mr. Herbert: A Distinctive Conjunctival Papule.—Mr. Worth: The Operative Treatment of Conical Cornea.—Mr. H. W. Bailey: A New Cell Proliferant.—Mr. Zohrab: The Relief of Tension in Chronic Glaucoma.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne-street, Edgware-road, W.

THURSDAY.—8.30 P.M., Dr. R. H. Cole: Hypochondriasis, its Significance and Treatment.—Mr. V. Z. Cope: Latent Surgical Disease.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, Royal Army Medical College, Grosvenor-road, S.W.

FRIDAY.—8 P.M., Demonstration of Various Microscopic and Other Specimens of Interest.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

FRIDAY.—5 P.M., Prof. W. G. Ball: Acute Infective Processes Due to the Streptococcus, with Special Reference to the Value of Vaccines and Serums in Treatment.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. G. Little: Clinique (Skin). 5.15 P.M., Lecture:—Dr. T. W. Eden: Clinical Diagnosis of Cancer of the Body of the Uterus.

TUESDAY.—4 P.M., Dr. P. Parkinson: Clinique (Medical). 5.15 P.M., Lecture:—Dr. N. Raw: The Treatment of Local Tuberculous Infections.

WEDNESDAY.—4 P.M., Mr. R. P. Rowlands: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. W. H. Battle: Ventral Hernia.

THURSDAY.—4 P.M., Dr. W. P. S. Branson: Clinique (Medical). 5.15 P.M., Lecture:—Dr. R. Hutchison: Chronic Diarrhœa, its Varieties and Treatment.

FRIDAY.—4 P.M., Mr. H. L. Eason: Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Edwards: Clinical Cases.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11 A.M., Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Bernstein: Blood Examination, Serology.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine. (Lecture V.)

THURSDAY.—10 A.M., Dr. Simson: Gynæcological Demonstration. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. P. Dunn: Infective Cyclitis.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. S. Taylor: Cerebral Hæmorrhage.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. Bishop Harman: Diseases of the Eye. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. R. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham): Nose, Throat, and Ear (Mr. H. D. Gillies). 3 P.M., Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

TUESDAY.—Clinic; 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld).; Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting). 4.30 P.M., Lecture:—Mr. H. W. Carson: Modern Methods of Investigation of the Surgical Disorders of Digestion, their Diagnosis and Treatment.

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Mr. W. Steuart); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Lecture:—Mr. H. W. Carson: Modern Methods of Investigation of the Surgical Disorders of Digestion, their Diagnosis and Treatment.

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. R. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. E. M. Leslie); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 3.15 P.M., Dr. R. Wells: Medicine. 2.15 P.M., Mr. R. Carling: Surgery. 4.15 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 2.15 P.M., Special Lecture:—Dr. S. Taylor: Rheumatoid Arthritis.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4.30 P.M., Special Lecture:—Dr. Pritchard: The Application of Pathology to Clinical Medicine.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Sir J. Rose Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—10 A.M., Radiography. 11 A.M., Dr. A. Davies: Pathological Demonstration. 2 P.M., Operations. Out-patient Demonstration:—10 A.M., Surgical and Medical. 11 A.M., Eye.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY.—4 P.M., Lecture:—Mr. Kellock: The Radical Cure of Inguinal Hernia.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. J. Collier: Headache.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. J. Collier: Ophthalmoplegia.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

TUESDAY.—6 P.M., Mr. W. Hampson: X Rays, Deeper Tissues.

UNIVERSITY OF LONDON (UNIVERSITY COLLEGE), The Francis Galton Laboratory for National Eugenics.

TUESDAY.—8.30 P.M., Prof. K. Pearson: Tuberculosis—Heredity and Environment. (Lecture VII.)

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street Piccadilly, W.

FRIDAY.—9 P.M., Mr. F. Soddy: The Origin of Radium.

SATURDAY.—3 P.M., Prof. Sir J. J. Thomson: Molecular Physics. (Lecture IV.)

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Dr. W. J. S. Bythell: X Ray Examination of the Stomach with Bismuth. (Post-Graduate Clinic.)

MANCHESTER ROYAL INFIRMARY.

TUESDAY.—4.30 P.M., Dr. H. Grffith: Demonstration of Cases of External Diseases of the Eye.

SALFORD ROYAL HOSPITAL.

THURSDAY.—4.30 P.M., Mr. G. Wright: Cholelithiasis. (Post-Graduate Course).

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-

square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (13th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's 2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (14th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (16th).—Royal Free (9A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

WE much regret that in our Diary of Feb. 24th the dates of two of Professor Flexner's Harben Lectures before the Royal Institute of Public Health were incorrectly stated.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

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Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1911 were given in THE LANCET of Dec. 30th, 1911.

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VOLUMES for the second half of the year 1911 are now ready. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Stewart's Instruments.)

THE LANCET Office, March 6th, 1912.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Feb. 29	29·83	S.W.	0·04	80	56	51	49	51	Overcast
Mar. 1	29·83	S.W.	...	64	53	49	48	50	Raining
,, 2	29·75	S.W.	0·06	80	56	48	48	51	Cloudy
,, 3	29·44	S.W.	0·30	83	54	45	46	47	Cloudy
,, 4	29·65	S.W.	0·08	60	52	42	44	45	Overcast
,, 5	29·23	W.	0·50	92	54	45	45	47	Cloudy
,, 6	29·43	S.W.	0·02	86	51	40	40	42	Cloudy

The following journals, magazines, &c., have been received:—Indian Ambulance Gazette, St. Bartholomew's Hospital Journal, Asylum News, Revue de Gynécologie, Mining Journal, Deutsche Zeitschrift für Nervenheilkunde, Brain, Report of the London School of Tropical Medicine on Filariasis and Elephantiasis in Fiji, Journal of Physiology, Le Monde Médical, Review of Neurology and Psychiatry, La Tuberculosi, Journal of the Royal Sanitary Institute, Journal of Obstetrics and Gynæcology, Indian Medical Gazette, Polyclinic, British Journal of Dental Science, South African Medical Review, Transvaal Medical Journal, Annals of Tropical Medicine and Parasitology, Public Health, Medical Review, Dominion Medical Monthly, Edinburgh Medical Journal, Journal of Laryngology.

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